

# Charter Township of Van Buren

## Water Tower Fuel Tank Relocation

Van Buren Water Tower  
Van Buren Township, Michigan

Issued for Bids April 24, 2023  
Project Number 211407



fishbeck.com 39500 MacKenzie Drive, Suite 100  
800.456.3824 Novi, Michigan

### GENERAL

G101 COVER

### CIVIL

C001 GENERAL NOTES AND LEGEND  
C101 SURVEY, REMOVAL AND SESC PLAN  
C201 SITE LAYOUT PLAN  
C202 TURCK TURN DIAGRAM  
C301 SITE GRADING PLAN  
C302 FUEL TANK PAD DETAIL GRADING PLAN  
C401 FUTURE DPW BUILDING CONCEPTUAL LAYOUT PLAN  
C501 WAYNE COUNTY DETAILS  
TOWNSHIP STANDARD DETAIL SHEETS

### ELECTRICAL

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E101 ELECTRICAL SITE PLAN  
E101P ELECTRICAL SITE PLAN - PHOTOMETRICS  
E401 ONE LINE DIAGRAM AND ELECTRICAL DETAILS

### LANDSCAPE

L101 LANDSCAPE PLAN

### FUEL TANK

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M-1 MATERIALS LIST  
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T-2 TANK LAYOUT  
T-3 GASOLINE TANK EQUIPMENT DETAILS  
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T-5 DEF TANK DETAILS  
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### FUEL TANK CONT.

D-2 GASOLINE DISPENSER DETAILS  
FS-1 CONCRETE AND MISCELLANEOUS SITE DETAILS  
FS-2 SIGNAGE DETAILS  
FS-3 SECURITY FENCE DETAILS  
FS-4 CONCRETE DETAILS  
FE-1 CONDUIT AND HAZARDOUS AREA LAYOUT  
FE-2 AST ELECTRICAL DETAILS

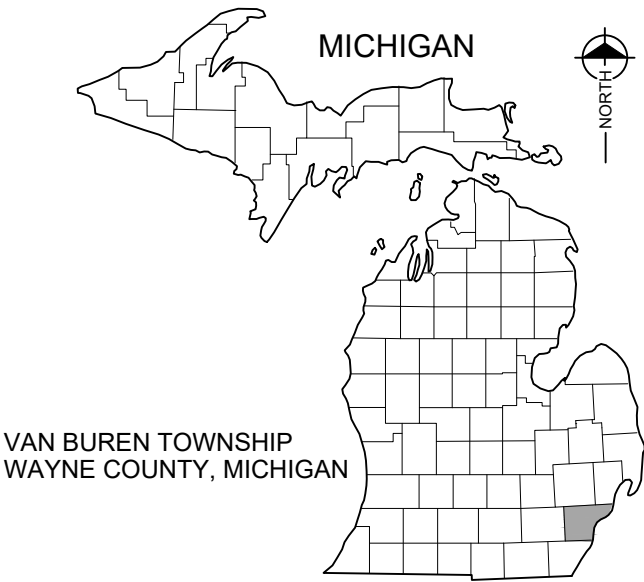
### PROPERTY DESCRIPTION

PARCEL ID: 83 062 99 0001 701  
PROPERTY ADDRESS: 46805 TYLER RD.  
LEGAL DESCRIPTION:  
PT OF THE NW 1/4 SEC 16 T3S R 8E DESC AS BEG S88 51 06E 1028.37 FT FROM THE NW COR OF SEC 16 - - TH S88 51 06E 1028.37 FT- TH S08 41 06E 1309.8 FT- TH S05 55 02E 430.12 FT- TH N87 42 50W 1154.91 FT- TH N03 55 12W 1701.13 FT TO POB - EXC THE N 60 FT - 41.58 AC  
ZONING DISTRICT: M-1 LIGHT INDUSTRIAL  
PARCEL SIZE: 41.58 ACRES  
USE STATEMENT:  
THE SITE CONTAINS THE TOWNSHIP'S WATER TOWER AND CORRESPONDING PUBLIC UTILITY. THE PROPOSAL INCLUDES ADDING AN ACCESSORY FUEL TANK. THE SITE IS ZONED M-1 LIGHT INDUSTRIAL AND A PUBLIC UTILITY BUILDING IS A PERMITTED USE ON THE PROPERTY. THE FUEL PUMPS ARE AN ACCESSORY USE TO THE TOWNSHIP'S PUBLIC UTILITY.

### LOCATION MAP



### VICINITY MAP



### UTILITY INFORMATION

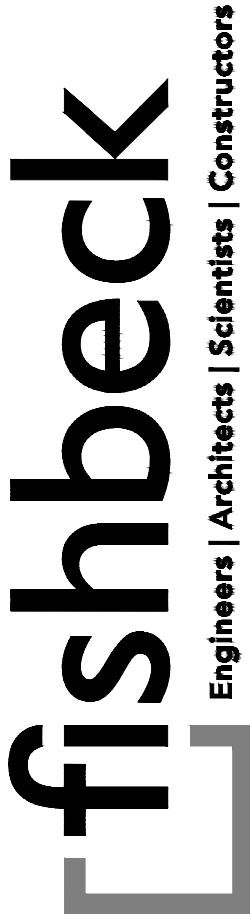
THE EXISTING UTILITIES SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN LOCATED FROM UTILITY RECORD DRAWINGS. ACTUAL UTILITY LOCATIONS MAY VARY FROM WHAT IS SHOWN. ALL UTILITIES TO BE FIELD VERIFIED BY UTILITY OWNER PRIOR TO CONSTRUCTION.

### WATER AND SEWER

VAN BUREN TOWNSHIP  
46425 TYLER RD  
VAN BUREN TOWNSHIP, MI 48111  
(734) 699-8900 X9227

### PERMITS REQUIRED

WAYNE COUNTY  
ROW PERMIT



Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

### REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/6/2023	OWNER REVIEW

Drawn By  
Designer  
Reviewer  
Manager PK2

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.  
211407

SHEET NO.

G101

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REVISITONS

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SHEET NO.

C001

GENERAL NOTES

- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES, RULES AND REGULATIONS. OBTAIN ALL NECESSARY LOCAL, STATE AND FEDERAL PERMITS AND PAY PERMIT FEES FOR THE WORK OR CONFIRM REQUIRED PERMITS HAVE BEEN OBTAINED BY OTHERS PRIOR TO COMMENCING CONSTRUCTION.
- BE RESPONSIBLE AT ALL TIMES FOR SITE SAFETY IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY AUTHORITY HAVING JURISDICTION.
- CALL MISS DIG ☎ 1-800-482-7171 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO CONFIRM THE LOCATIONS OF EXISTING BURIED UTILITIES. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM. COORDINATE THE RELOCATION OF EXISTING UTILITIES WITH THE UTILITY OWNER. BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND REPAIRING DAMAGE TO EXISTING UTILITIES RESULTING FROM THE WORK. BE RESPONSIBLE FOR THE COSTS OF REPAIRING OR REPLACING ANY DAMAGED UTILITIES AT NO EXPENSE TO THE OWNER.
- PROVIDE TRAFFIC CONTROL BARRICADES, SIGNS, LIGHTS, ETC. IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AS NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC MAINTAIN THESE DEVICES AT ALL TIMES DURING CONSTRUCTION.
- MAINTAIN A CLEAN WORK AREA. THOROUGHLY CLEAN AND/OR SWEEP STREETS AND ROADWAYS AS REQUIRED BY THE GOVERNING AUTHORITY.
- MAINTAIN ACCESS TO EXISTING DRIVEWAYS AND MAIL BOXES DURING CONSTRUCTION. COORDINATE WITH THE AUTHORITIES HAVING JURISDICTION. CONDUCT OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. ANY CLOSURE REQUIRES PERMISSION FROM THE AUTHORITIES HAVING JURISDICTION.
- RESTORE ALL DISTURBED AREAS NOT COVERED BY OTHER SURFACE TREATMENT WITH 4" TOPSOIL, SEED, FERTILIZER, MULCH OR MULCH BLANKET.
- PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE. RESTORE/REPLACE DAMAGED IMPROVEMENTS TO ORIGINAL CONDITION ACCEPTABLE TO PARTIES HAVING JURISDICTION.
- KEEP THE APPROVED SET OF PROJECT DRAWINGS ON SITE AT ALL TIMES. REDLINE THE ACTUAL LOCATIONS AND DIMENSION (VERTICAL AND HORIZONTAL) OF CONSTRUCTED OR EXISTING ITEMS WHICH DIFFER FROM OR ARE NOT SHOWN ON THE ORIGINAL DRAWINGS. SUBMIT THESE RECORD DRAWINGS TO THE ENGINEER AT THE COMPLETION OF THE WORK.
- PROTECT TREES TO REMAIN FROM DAMAGE DURING CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- HIRE A LICENSED LAND SURVEYOR TO WITNESS AND REPLACE ALL PROPERTY IRONS/SURVEY MONUMENTS WHICH WILL BE ALTERED IN ANY WAY DURING CONSTRUCTION.
- DO NOT SCALE DRAWINGS TO DETERMINE DIMENSIONS. REFER DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION.
- THE INFORMATION CONTAINED ON THESE DRAWINGS PERTAINING TO EXISTING CONDITIONS, SUCH AS BUT NOT LIMITED TO, UTILITIES, TOPOGRAPHY, SUBSURFACE CONDITIONS, IS FURNISHED SOLELY AS THE BEST INFORMATION AVAILABLE AND ITS ACCURACY IS NOT GUARANTEED. THE USE OF THIS INFORMATION DOES NOT PROVIDE RELIEF FOR ANY RESPONSIBILITY FOR DAMAGES DUE TO ANY INACCURACIES.
- ALL REMOVED MATERIALS ARE THE PROPERTY OF THE CONTRACTOR. CLEANUP AND DISPOSE OF ALL EXCESS MATERIALS OFF SITE AT A LOCATION DESIGNATED FOR THIS USE AND IN ACCORDANCE WITH LOCAL REGULATIONS OR AT AN ON SITE LOCATIONS DESIGNATED BY THE OWNER.
- USE (2) TWO BENCH MARKS FOR VERIFICATION OF ALL CONSTRUCTION ELEVATIONS. SET ADDITIONAL BENCH MARKS TO COMPLY WITH THIS REQUIREMENT.
- RESTORE ALL STREET SURFACES, DRIVEWAYS, CULVERTS, ROADSIDE DRAINAGE DITCHES, AND OTHER PUBLIC OR PRIVATE STRUCTURES THAT ARE DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION, UNLESS NOTED OTHERWISE IN THE PLANS.

SESC NOTES

- MAINTAIN A COPY OF THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT ON THE SITE FOR THE DURATION OF CONSTRUCTION, IF REQUIRED.
- MAINTAIN AND REPAIR ALL SESC BEST MANAGEMENT PRACTICES Bmps DURING CONSTRUCTION UNTIL ALL VEGETATION IS ESTABLISHED, (ALL DISTURBED SOIL SURFACES ARE UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR AS DEFINED BY PERMIT.)
- PERFORM ALL EARTH-DISTURBING CONSTRUCTION ACTIVITIES WITHIN THE LIMITS OF DISTURBANCE AS INDICATED ON THE DRAWINGS.
- REVIEW THE LIMITS OF DISTURBANCE SHOWN ON THE DRAWINGS AND FIELD-STAKING THE LIMIT OF DISTURBANCE LINE PRIOR TO THE START OF CONSTRUCTION AND/OR CONTRACTORS OPERATIONS AT NO ADDITIONAL COST TO OWNER.
- INSTALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN PRIOR TO THE START OF ANY LAND CLEARING OR GRADING ACTIVITIES.
- APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED BY SESC PERMIT AND IMPLEMENT ADDITIONAL MEASURES AS DICTATED BY SITE CONDITIONS.
- ENSURE THAT ANY SEDIMENTATION RESULTING FROM WORK ON THIS SITE IS CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
- LEAVE SLOPES IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
- LOCATE LAY DOWN, STAGING AND STOCKPILE AREAS WITHIN THE PERMITTED LIMITS OF DISTURBANCE.
- INSTALL SILT FENCE AROUND THE PERIMETER OF ON-SITE SOIL STOCKPILE AREAS IF RUNOFF CAN IMPACT A STABILIZED PART OF THE SITE, OR LEAVE THE SITE. ADDITIONALLY, INACTIVE PORTIONS OF THE STOCKPILE AREAS ARE TO BE STABILIZED AS REQUIRED BY PERMIT.
- IMPLEMENT TEMPORARY STABILIZATION MEASURES ON ANY DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES WILL NOT RESUME FOR 14 DAYS OR MORE. IMPLEMENTATION OF TEMPORARY STABILIZATION MEASURES MUST BE INITIATED IMMEDIATELY AND COMPLETED WITHIN SEVEN (7) DAYS FROM WHEN CONSTRUCTION ACTIVITIES TEMPORARILY CEASED ON ANY PORTION OF THE SITE. APPLY 3-5 LBS/1000 SFT. TEMPORARY SEED AND STRAW MULCH OVER DISTURBED AREA.
- TOPSOIL AND SEED ALL EXPOSED AREAS WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE CONCLUSION OF FINAL GRADING IN THAT AREA.
- REGULARLY CHECK SEEDED AREAS TO SEE THAT A GOOD STAND OF VEGETATION IS "ESTABLISHED". VEGETATION WILL NOT BE CONSIDERED "ESTABLISHED" UNTIL 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED WITH PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER. FERTILIZE, WATER, RESEED AS MULCH AS NEEDED.
- MINIMIZE TRACKING OF SOIL AND SEDIMENT ONTO OFF-SITE ROADWAYS THROUGH THE USE OF APPROPRIATE MEASURES. IMMEDIATELY REMOVE ANY SOIL OR SEDIMENT TRACKED ONTO THE ROADWAYS.
- NO VEHICLES AND EQUIPMENT CLEANING IS ALLOWED AT LOCATIONS WHERE RUNOFF COULD FLOW DIRECTLY INTO A WATER COURSE OR DOWNSTREAM STORM SEWER.
- SOIL INFORMATION:  
  
BnB BOYER LOAMY SAND, 0 TO 6 PERCENT SLOPES
- AREA OF DISTURBANCE: 0.67 ACRES

SITE PLAN ABBREVIATIONS

ABBREV.	MEANING	ABBREV.	MEANING
ABAN.	ABANDON	MDNR	MICHIGAN DEPARTMENT OF NATURAL RESOURCES
ADJ.	ADJACENT	MDOT	MICHIGAN DEPARTMENT OF TRANSPORTATION
AGG.	AGGREGATE	MDPH	MICHIGAN DEPARTMENT OF PUBLIC HEALTH
ALT.	ALTERNATE	MFR	MANUFACTURER
APPD.	APPROVED	MGD	MILLION GALLONS PER DAY
APPROX.	APPROXIMATE	MH	MANHOLE
B/B	BACK TO BACK	MIN.	MINIMUM
BIT.	BITUMINOUS	MISC.	MISCELLANEOUS
BLDGS.	BUILDING	MJ	MECHANICAL JOINT
BLVD.	BOULEVARD	MON.	MONUMENT
BM	BENCH MARK	NA	NOT APPLICABLE
BNDY.	BOUNDARY	NIC	NOT IN CONTRACT
BOT.	BOTTOM	NRCP	NON-REINFORCED CONCRETE PIPE
BSMT.	BASEMENT	NTS	NOT TO SCALE
C & G	CURB AND GUTTER	OC	ON CENTER
C/C	CENTER TO CENTER	OD	OUTSIDE DIAMETER
CATV	CABLE TELEVISION	OE	OVERHEAD ELECTRIC
CB	CATCH BASIN	OP	FIBER OPTICS
CF	CUBIC FEET	ORIG.	ORIGINAL
CFS	CUBIC FEET PER SECOND	OT	OVERHEAD TELEPHONE
CL	CENTERLINE	PC	POINT OF CURVE
CMP	CORRUGATED METAL PIPE	PCC	POINT OF COMPOUND CURVATURE
CO	CLEAN OUT	PE	POLYETHYLENE
CONC.	CONCRETE	PE PERF.	POLYETHYLENE PIPE PERFORATED
CONST.	CONSTRUCTION	PERF.	PERFORATED
COORD.	COORDINATE	PI	POINT OF INTERSECTION
CP	COPPER PIPE	PIV	POST INDICATOR VALVE
CSP	CORRUGATED STEEL PIPE	PL	PROPERTY LINE
CSPA	CORRUGATED STEEL PIPE ARCH	POB	POINT OF BEGINNING
CULV.	CULVERT	POE	POINT OF ENDING
CY	CUBIC YARD	PRC	POINT OF REVERSE CURVE
DEG (°)	DEGREE	PROP.	PROPOSED
DEMO.	DEMOLISH	PRP.	POUNDS PER SQUARE FOOT
DIP	DUCTILE IRON	PSI	POUNDS PER SQUARE INCH
DIA.	DIAMETER	PT	POINT OF TANGENCY
DIM.	DIMENSION	PVC	POLYVINYL CHLORIDE
DIST.	DISTANCE	PVC	POINT OF VERTICAL CURVE
EL.	ELEVATION	PVI	POINT OF VERTICAL INTERSECTION
ENGR.	ENGINEER	PVMT	PAVEMENT
EOM	EDGE OF METAL	PVT	POINT OF VERTICAL TANGENCY
EQUIP.	EQUIPMENT	QTY.	QUANTITY
ESMT.	EASEMENT	R.	RADIUS
EXIST. EX.	EXISTING	RCP	REINFORCED CONCRETE PIPE
EXT.	EXTERIOR	RED.	REDUCER
F/F	FACE TO FACE	REF.	REFERENCE
FDN.	FOUNDATION	REQD.	REQUIRED
FIG.	FIGURE	REV.	REVISION
FF	FINISH FLOOR	RJ	RESTRAINED JOINT
FIN. GR.	FINISH GRADE	ROW	RIGHT OF WAY
FM	FORCE MAIN	SAN	SANITARY SEWER
FTG.	FOOTING	SF	SQUARE FOOT
GEN.	GENERATOR	SPEC.	SPECIFICATION
GND.	GROUND	SS	SIDE SLOPE
GPD	GALLONS PER DAY	STA.	STATION
GPM	GALLONS PER MINUTE	STD.	STANDARD
HDPE	HIGH DENSITY POLYETHYLENE	STL.	STEEL
HDWL.	HEADWALL	STM	STORM SEWER
H.	HEIGHT	SYD	SQUARE YARD
HORIZ.	HORIZONTAL	TC	TOP OF CURB
HP	HIGH POINT	TAN.	TANGENT
HWL	HIGH WATER LEVEL	TEMP.	TEMPORARY
HWY.	HIGHWAY	TOC	TOP OF CASTING
HYD.	HYDRANT	T/W	TOP OF WALL
ID.	INSIDE DIAMETER	TRPT	TRANSVERSE POINT
INV.	INVERT ELEVATION	TYP.	TYPICAL
INCL.	INCLUDE	UD	UNDER DRAIN
LA	LANDING AREA (SIDEWALK)	UTL.	UTILITY
LAT.	LATERAL	VB	VALVE BOX
LF	LINEAL FEET	VCP	VITRIFIED CLAY PIPE
L.	LENGTH	VERT.	VERTICAL
LP	LOW POINT	W/	WITH
LS	LUMP SUM	W/O	WITHOUT
LWL	LOW WATER LEVEL	WL	WATER LEVEL
M/L	MORE OR LESS	WTR	WATER MAIN
MAINT.	MAINTENANCE		

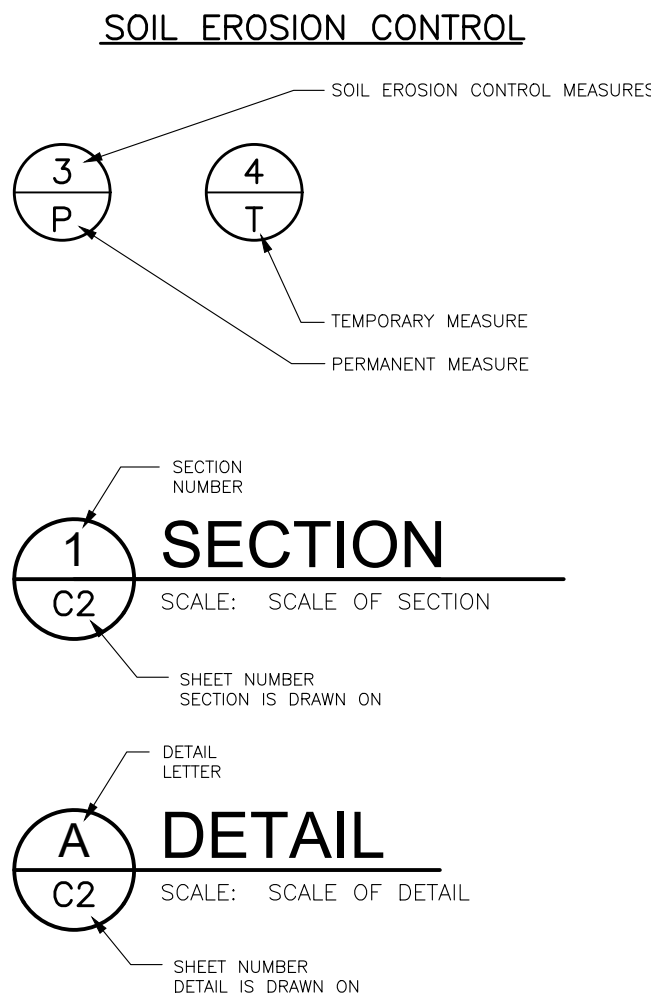
SITE SYMBOL LEGEND

SURVEY		TOPOGRAPHY — PLAN	
	BENCH MARK		SHRUBS
	SECTION CORNER		CONIFEROUS TREE
	CENTER OF SECTION		DECIDUOUS TREE
	QUARTER CORNER		HEDGE
	CONCRETE MONUMENT		EDGE OF WOODS
	PROPERTY IRON		MARSH (SWAMP)
	SET PROPERTY IRON		EXISTING DITCH
	LOT LINE (AS PLATTED)		PROPOSED DITCH
	PROPERTY HOOK (COMMON PROPERTY OWNERSHIP)		EDGE OF WATER
	TITLE LINE / PROPERTY LINE		CONTOUR MAJOR
	ROW LINE		CONTOUR MINOR
	SECTION LINE		MONITORING WELL
	EASEMENT CENTERLINE		SOIL BORING
	EASEMENT LINE		LIGHT
	SURVEY LINE STATIONING		GUY ANCHOR
	TRAVERSE POINT		UTILITY POLE
	SOIL BORING LOCATION		SIGN
			FLAG POLE
			MAIL BOX
			PARKING METER
			RAILROAD TRACKS SCALE: 1" = 60' OR LESS
			RAILROAD TRACKS SCALE: 1" = 100' OR MORE

EXISTING UTILITIES	
	8" SAN. SANITARY SEWER & MANHOLE
	12" STM. STORM SEWER & MANHOLE
	CATCH BASIN CURB TYPE
	CATCH BASIN LAWN TYPE
	VALVE
	HYDRANT
	PLUG
	6" WTR. WATER MAIN
	4" FM. FORCE MAIN
	2" GAS. GAS MAIN
	ELEC. UNDERGROUND ELECTRIC
	OP. FIBER OPTICS
	TEL. UNDERGROUND TELEPHONE
	2" OIL. OIL TRANSMISSION LINE
	6" STEAM. UNDERGROUND STEAM
	2" SPRK. UNDERGROUND SPRINKLER
	CATV. CABLE TELEVISION
	TELEPHONE PEDESTAL
	PIPE-ONLY CULVERT
	FLARED END SECTION CULVERT
	HEADWALL CULVERT

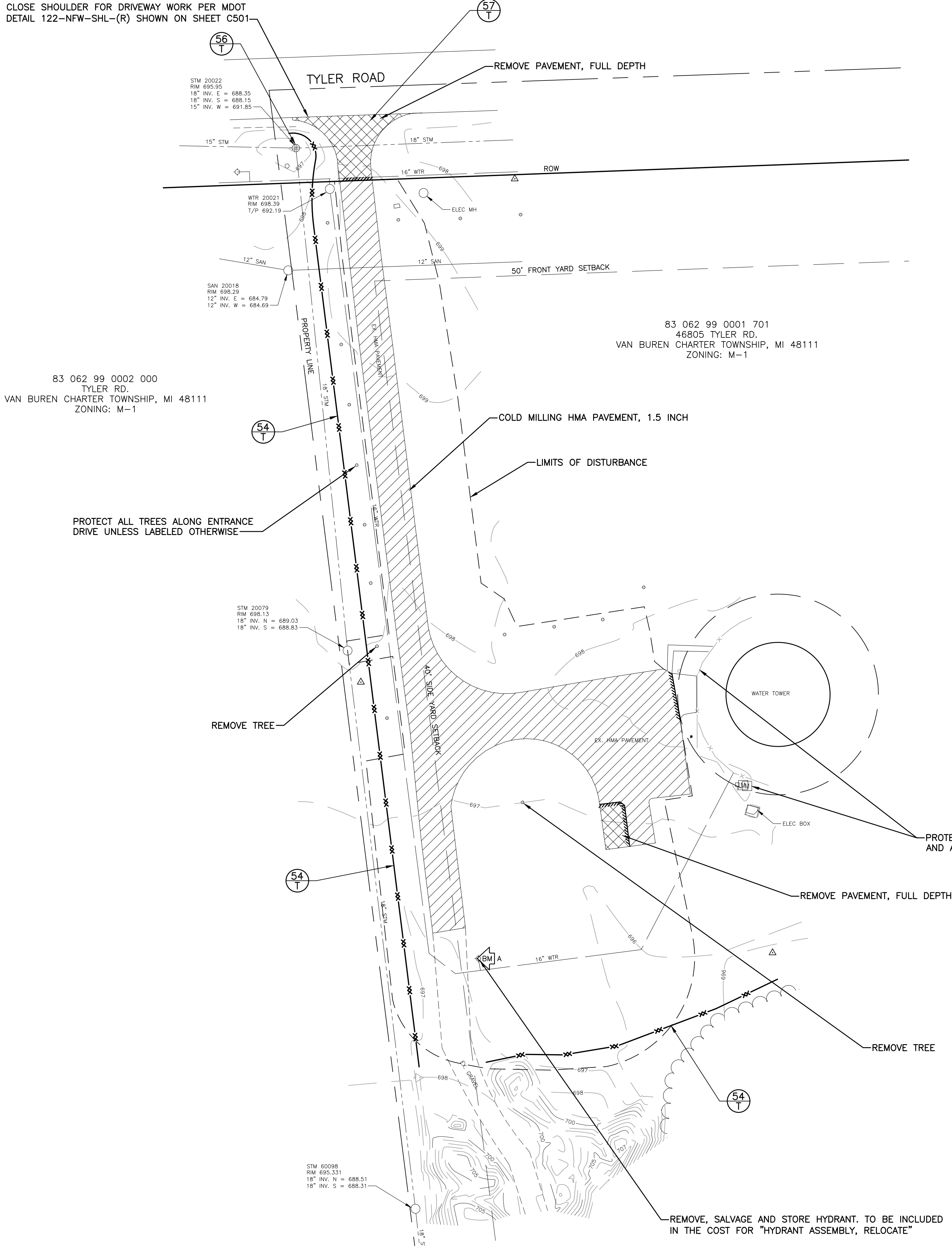
PROPOSED UTILITIES	
	8" SAN. SANITARY SEWER & MANHOLE
	WYE & LEAD
	RISER & LEAD
	STANDARD SEWER CLEAN OUT
	MAX. ELEVATION OF LOT LEAD AT PROPERTY LINE
	12" STM. STORM SEWER & MANHOLE
	CATCH BASIN
	UNDER DRAIN
	8" WATER. WATER MAIN
	VALVE & BOX
	VALVE & CHAMBER
	METER
	PLUG
	STANDARD FIRE HYDRANT ASSEMBLY
	CURB STOP & BOX
	6" FM. FORCE MAIN
	FORCE MAIN AIR RELEASE STRUCTURE
	PIPE-ONLY CULVERT
	FLARED END SECTION CULVERT
	HEADWALL CULVERT

MISCELLANEOUS





CLOSE SHOULDER FOR DRIVEWAY WORK PER MDOT  
DETAIL 122-NFW-SHL-(R) SHOWN ON SHEET C501



### EGLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

KEY	DETAIL	CHARACTERISTICS
6		Facilitates establishment of vegetative cover Effective for drainageways with low velocity Easily placed in small quantities by inexperienced personnel Should include prepared topsoil bed
54		Use geotextile and posts or poles May be constructed or prepackaged Easy to construct and locate as necessary
56		Manufactured filter bag inserted under casting. Collects sediment at catch basin inlet.
57		Used at every point where construction traffic enters or leaves a construction site.



TEMPORARY  
MEASURE



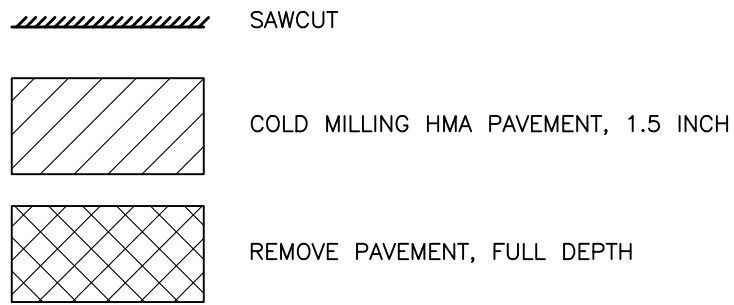
PERMANENT  
MEASURE

ESTIMATED CONSTRUCTION QUANTITIES		
QUANTITY	UNIT	DESCRIPTION
120	SYD	REMOVE PAVEMENT, FULL DEPTH
1,300	SYD	COLD MILLING HMA PAVEMENT, 1.5 INCH
2	EA	REMOVE TREE
1	EA	HYDRANT ASSEMBLY, RELOCATE

### BENCH MARKS

BENCH MARK A ELEVATION: 697.46  
TOP OF W HYDRANT BOLT UNDER "DI" AT END OF ASPHALT DRIVE  
TO VAN BUREN TOWNSHIP WATER TOWER.

### SYMBOL LEGEND



### SESC NOTES

1. MAINTAIN AND REPAIR ALL SESC BEST MANAGEMENT PRACTICES BMP'S DURING CONSTRUCTION UNTIL ALL VEGETATION IS ESTABLISHED. (ALL DISTURBED SOIL SURFACES ARE UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR AS DEFINED BY PERMIT.)
2. APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED BY SESC PERMIT AND IMPLEMENT ADDITIONAL MEASURES AS DICTATED BY SITE CONDITIONS.
3. ENSURE THAT ANY SEDIMENTATION RESULTING FROM WORK ON THIS SITE IS CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS.
4. LEAVE SLOPES IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
5. TOPSOIL AND SEED ALL EXPOSED AREAS WITHIN SEVEN (7) CALENDAR DAYS FOLLOWING THE CONCLUSION OF FINAL GRADING IN THAT AREA.
6. MINIMIZE TRACKING OF SOIL AND SEDIMENT ONTO OFF-SITE ROADWAYS THROUGH THE USE OF APPROPRIATE MEASURES. IMMEDIATELY REMOVE ANY SOIL OR SEDIMENT TRACKED ONTO THE ROADWAYS.
7. NO VEHICLES AND EQUIPMENT CLEANING IS ALLOWED AT LOCATIONS WHERE RUNOFF COULD FLOW DIRECTLY INTO A WATER COURSE OR DOWNSTREAM STORM SEWER.
8. AREA OF DISTURBANCE = 0.86 ACRES
9. SITE SOILS:  
THETFORD LOAMY SAND, 0 TO 2 PERCENT SLOPES

### REMOVAL NOTES

1. THE EXTENT OF REMOVALS AND DEMOLITION SHALL BE FIELD VERIFIED BY CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DEVIATIONS FROM INFORMATION SHOWN.
2. UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE PLANS, ALL SIDEWALKS, DRIVES, CULVERTS, DRAINAGE STRUCTURES, AND ABOVE AS WELL AS BELOW GRADE UTILITIES SHALL BE PROTECTED. ALL SUCH ITEMS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH NEW AT NO ADDITIONAL COST TO THE OWNER.
3. PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL/EQUIPMENT SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
4. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS DRAWING HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. VERIFY CRITICAL INVERT INFORMATION PRIOR TO BEGINNING CONSTRUCTION.
5. DAMAGE CAUSED TO SURROUNDING AREA PAVEMENT OUTSIDE THE CONSTRUCTION LIMITS SHALL BE SAWCUT AND REPLACED AT NO ADDITIONAL COST TO THE OWNER.

\* DATES ARE APPROXIMATE AND WILL BE REVISED AT PRE-CONSTRUCTION MEETING.

SESC SCHEDULE AND SEQUENCING	JUL 2023	AUG 2023	SEP 2023
STABILIZE CONSTRUCTION ENTRANCE			
INSTALL BMP'S			
REMOVE AND MILL EXISTING PAVEMENT			
SITE UTILITIES			
FUEL TANK INSTALLATION			
SITE GRADING			
SITE PAVING			
LANDSCAPE & FINAL RESTORATION			



### SURVEY, REMOVAL AND SESC PLAN

SCALE: 1" = 30'  
0 15 30 60

## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

### REVISONS

4/24/2023	BIDS
4/6/2023	PERMITS
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1/5/2023	OWNER REVIEW

Drawn By  
Designer  
Reviewer  
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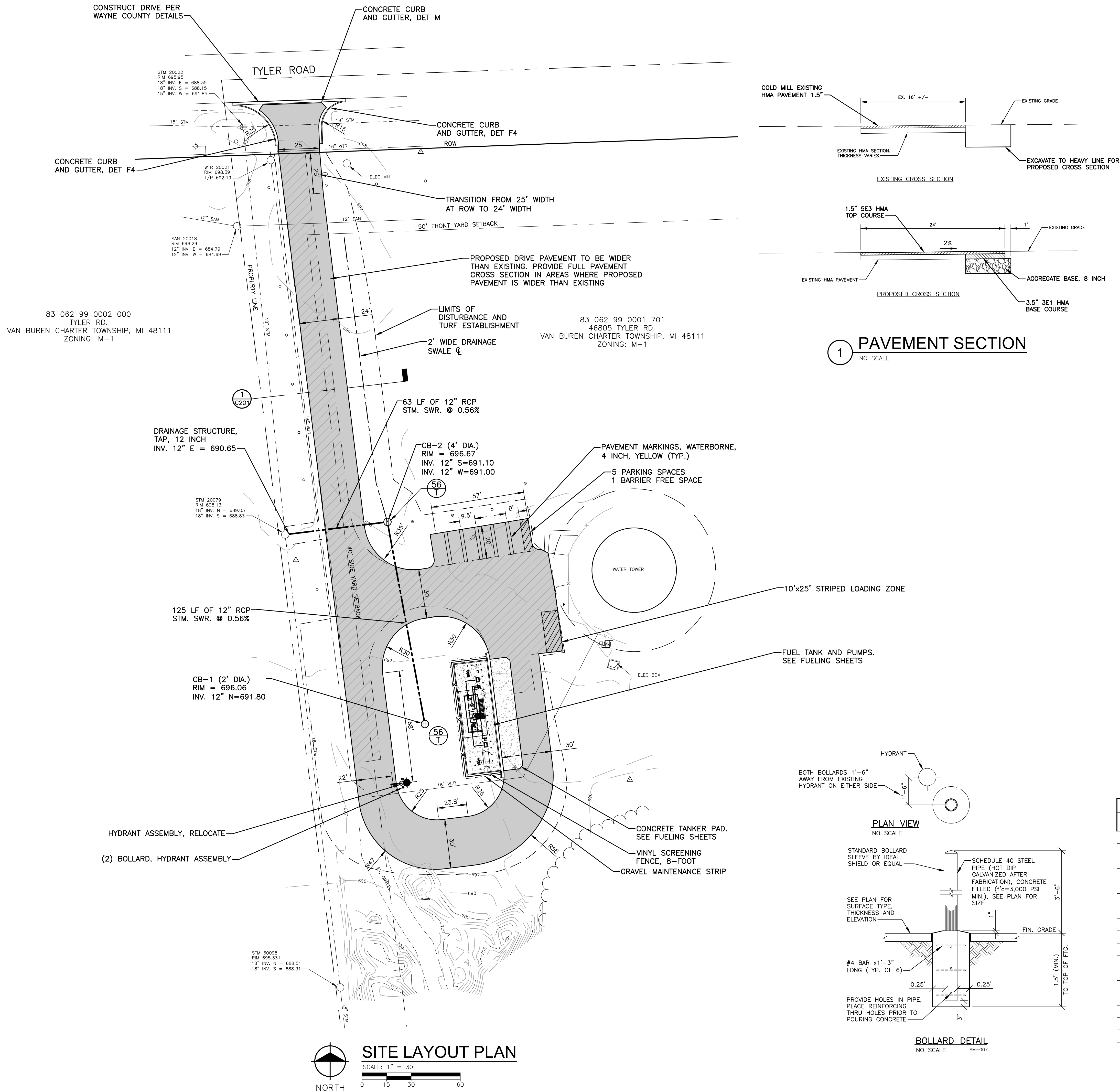
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SHEET NO.

**C101**



#### BENCH MARKS

BENCH MARK A  
TOP OF W HYDRANT BOLT UNDER "DI" AT END OF ASPHALT DRIVE  
TO VAN BUREN TOWNSHIP WATER TOWER. ELEVATION: 697.46

#### SYMBOL LEGEND

- 5" HMA PAVEMENT OVER 8" MDOT 21AA AGGREGATE BASE
- 1.5" HMA TOP COURSE OVER EXISTING MILLED SECTION
- 9" NON-REINFORCED CONCRETE PAVEMENT OVER 8" MDOT 21AA AGGREGATE BASE

#### NOTES

- DIMENSIONS ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING, AND EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
- KEEP THE APPROVED AND/OR MOST CURRENT SET OF PROJECT DRAWINGS ON SITE AT ALL TIMES. CONTRACTOR TO CONFIRM THEY ARE IN POSSESSION OF THE MOST CURRENT DRAWING FILES.

#### ZONING

ZONING DISTRICT: M-1 LIGHT INDUSTRIAL

SETBACKS: FRONT YARD 50 FT  
SIDE YARD (ONE) 40 FT  
SIDE YARD (TOTAL OF 2) 80 FT  
REAR YARD 40 FT

#### PARKING

WHOLESALE/WAREHOUSE STORAGE ESTABLISHMENTS (NON-RETAIL WAREHOUSE):

5 PLUS 1 PER 1,750 SFT GROSS FLOOR AREA PLUS 1 PER 350 USEABLE SFT  
6,800 SFT / 350 = 3.89 => 4  
4 + 5 = 9 SPACES

GASOLINE SERVICE STATION AND VEHICLE SERVICE:

1 PER GAS PUMP, 2 PER SERVICE AREA OR STALL AND 1 PER EMPLOYEE ON PEAK SHIFT

1 SPACE PER 2 GAS PUMPS = 2 SPACES

TOTAL PARKING SPACES REQUIRED:

9 + 2 = 11 SPACES

TOTAL PARKING PROVIDED:

5 SPACES  
1 BARRIER FREE SPACE  
1 GAS PUMP SPACE  
7 TOTAL SPACES

#### ESTIMATED CONSTRUCTION QUANTITIES

QUANTITY	UNIT	DESCRIPTION
1	EA	DRAINAGE STRUCTURE, 24-INCH DIA
1	EA	DRAINAGE STRUCTURE, 48-INCH DIA
190	FT	STORM SEWER, 12-INCH
2	EA	DRAINAGE STRUCTURE, COVER, BEEHIVE
1	EA	DRAINAGE STRUCTURE, TAP, 12-INCH
2	EA	BOLLARD, HYDRANT ASSEMBLY
1,270	SYD	AGGREGATE BASE, 8-INCH
150	SYD	AGGREGATE BASE, 9-INCH
230	TON	BITUMINOUS PAVEMENT, 5E3
250	TON	BITUMINOUS PAVEMENT, 3E1
75	FT	CONCRETE CURB AND GUTTER, DET F4
70	FT	CONCRETE CURB AND GUTTER, DET M
25	SYD	GRAVEL MAINTENANCE STRIP
459	FT	PAVEMENT MARKING, WATERBORNE, 4-INCH, YELLOW
459	FT	PAVEMENT MARKING, WATERBORNE, 4-INCH, YELLOW, 2ND APPLICATION
115	FT	VINYL FENCE, 8-FOOT
1,740	SYD	TURF ESTABLISHMENT

## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

#### REVISONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By

Designer

Reviewer

Manager PK2

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.

211407

SHEET NO.

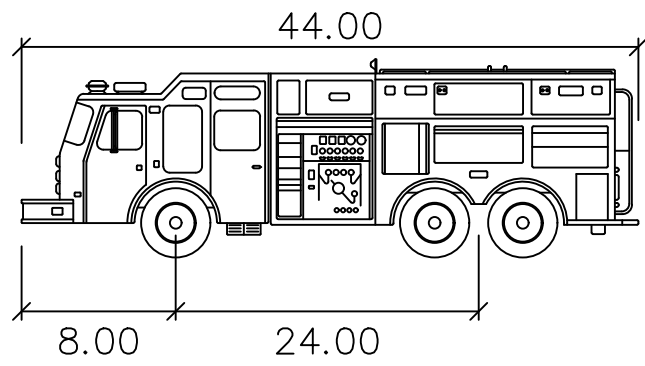
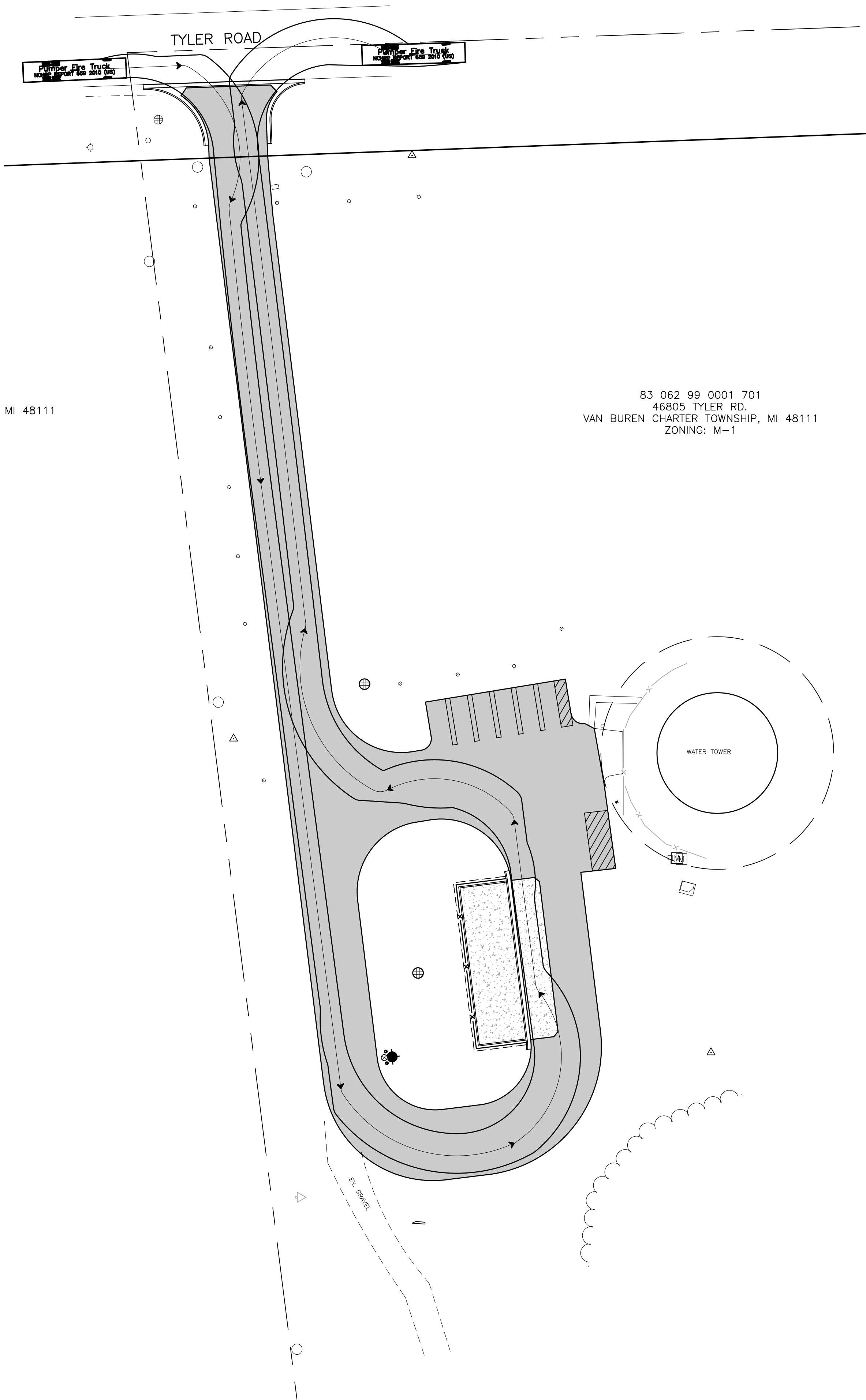
# C201



PLOT INFO: Z:\2021\211407\CAD\C202\211407-SITE LAYOUT PLAN.DWG LAYOUT: C202 DATE: 4/25/2023 TIME: 10:04:17 AM USER: MILEPPEK

83 062 99 0002 000  
TYLER RD.  
VAN BUREN CHARTER TOWNSHIP, MI 48111  
ZONING: M-1

83 062 99 0001 701  
46805 TYLER RD.  
VAN BUREN CHARTER TOWNSHIP, MI 48111  
ZONING: M-1



Pumper Fire Truck

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 37.8



TRUCK TURNING PLAN

SCALE: 1" = 30'  
0 15 30 60

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By

Designer

Reviewer

Manager

PK2

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PROJECT NO.

211407

SHEET NO.

C202

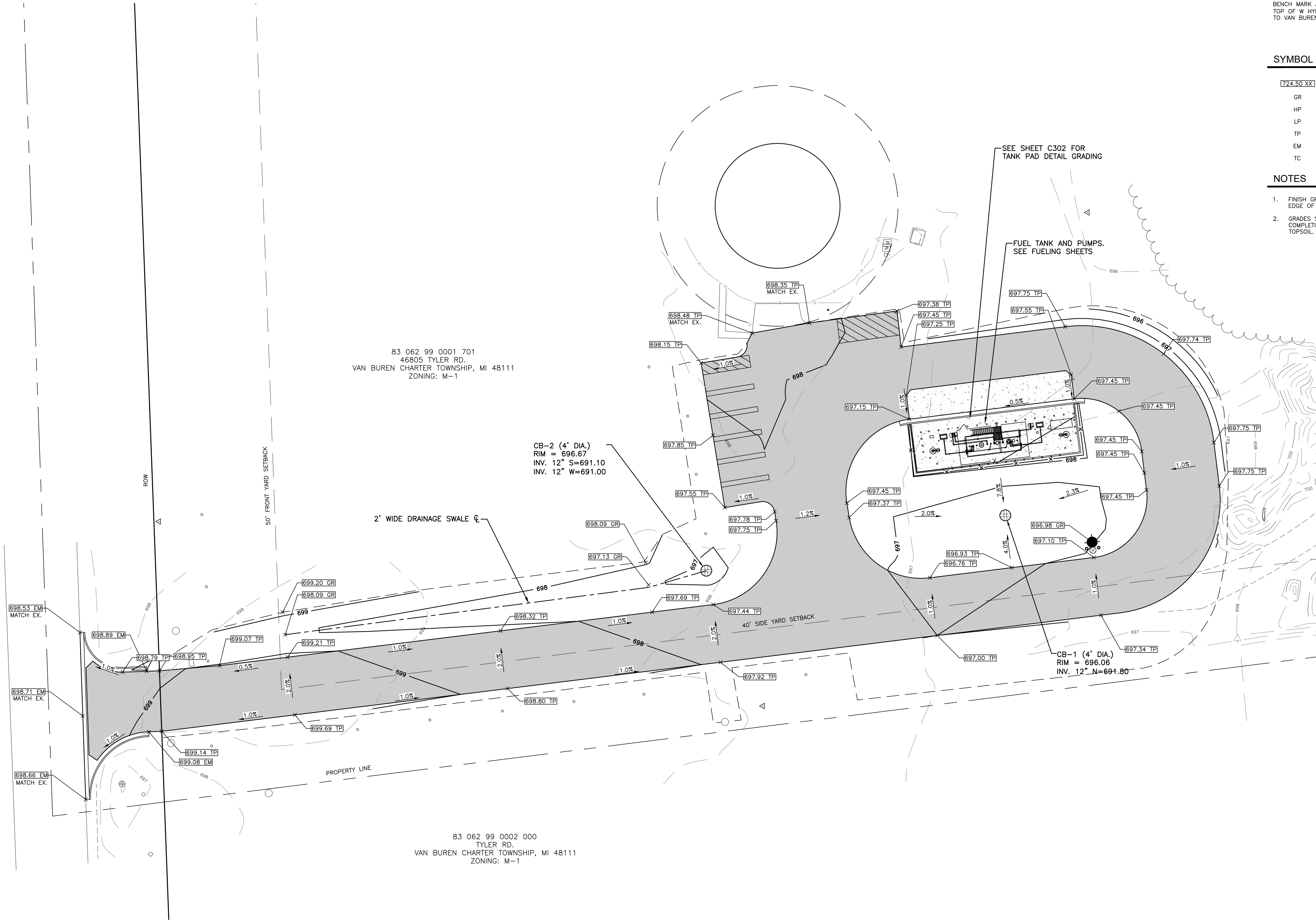
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Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

PLT: INFO: Z: 2021/12/14 07: CAD: C301/211407: GRADING PLANDWG LAYOUT: C301 DATE: 4/25/2023 TIME: 10:04:45 AM USER: MLEPPEK



#### BENCH MARKS

BENCH MARK A ELEVATION: 697.46  
TOP OF W HYDRANT BOLT UNDER "DI" AT END OF ASPHALT DRIVE  
TO VAN BUREN TOWNSHIP WATER TOWER.

#### SYMBOL LEGEND

724.50 XX	SPOT ELEVATION
GR	GRADE ELEVATION
HP	HIGH POINT
LP	LOW POINT
TP	TOP OF PAVEMENT
EM	EDGE OF METAL
TC	TOP OF CURB

#### NOTES

- FINISH GRADE OF SOIL EDGES ALONG PAVEMENT TO MATCH EDGE OF PAVEMENT.
- GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENT OF TOPSOIL.



#### SITE GRADING PLAN

SCALE: 1" = 20'



## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

#### REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By

Designer

Reviewer

Manager PK2

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.

211407

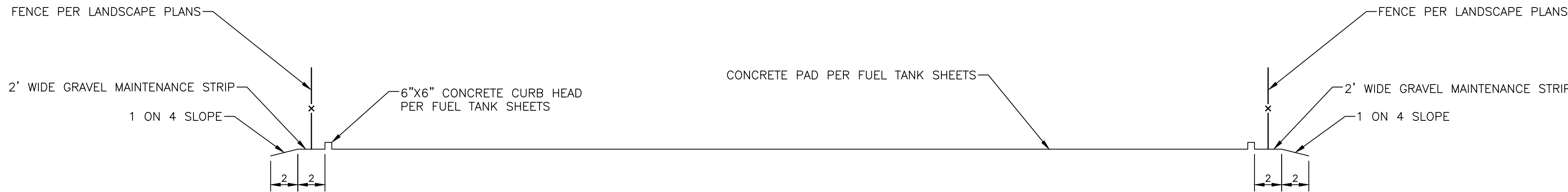
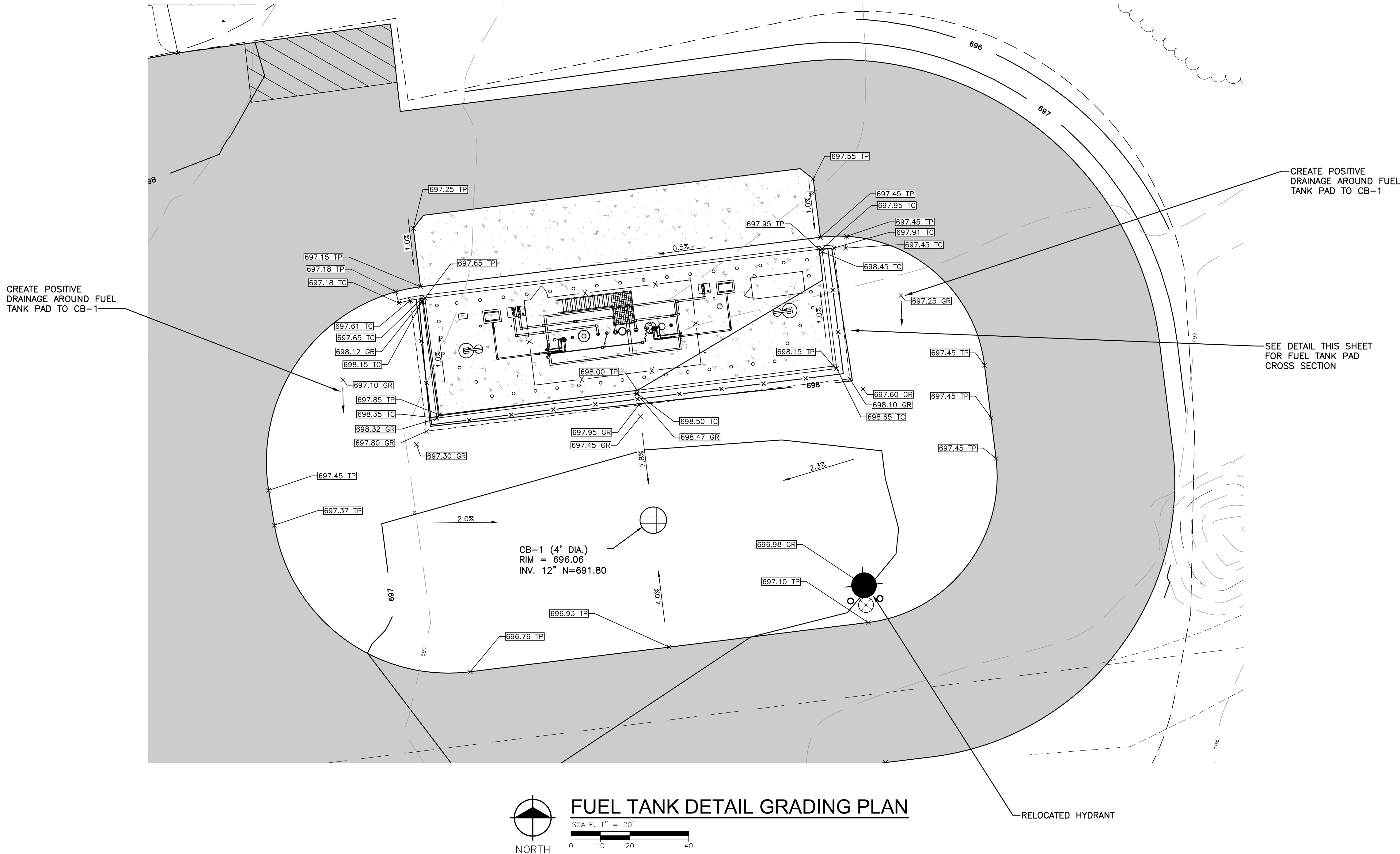
SHEET NO.

# C301

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PLT: INFO: Z:\2021\211407\CADD\C302\211407-FUEL TANK PAD DETAIL GRADING.DWG LAYOUT: C302 DATE: 4/25/2023 TIME: 10:05:05 AM USER: MLEPPEK



BENCH MARKS

BENCH MARK A ELEVATION: 697.46  
TOP OF W HYDRANT BOLT UNDER "DI" AT END OF ASPHALT DRIVE  
TO VAN BUREN TOWNSHIP WATER TOWER.

SYMBOL LEGEND

724.50 XX	SPOT ELEVATION
GR	GRADE ELEVATION
HP	HIGH POINT
LP	LOW POINT
TP	TOP OF PAVEMENT
EM	EDGE OF METAL
TC	TOP OF CURB

NOTES

- FINISH GRADE OF SOIL EDGES ALONG PAVEMENT TO MATCH EDGE OF PAVEMENT.
- GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS AND PLACEMENT OF TOPSOIL.

Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/6/2023	OWNER REVIEW

Drawn By

Designer

Reviewer

Manager

PK2

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PROJECT NO.

211407

SHEET NO.

C302

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PLOT INFO: Z:\2021\211407\CADD\C401\211407-FUTURE DPW SITE.DWG LAYOUT: C401 DATE: 4/25/2023 TIME: 10:05:41 AM USER: MTEPPEK



FUTURE DPW BUILDING CONCEPTUAL LAYOUT

SCALE: 1" = 40'  
0 20 40 80

**Charter Township of Van Buren**  
Wayne County, Michigan  
Water Tower Fuel Tank Relocation

REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By	ML2
Designer	ML2
Reviewer	
Manager	PK2

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.  
211407

SHEET NO.

**C401**







MECHANICALLY COMPACTED

EX UTILITY OR DRAIN TILE

BANK RUN SAND MEETING REQUIREMENTS OF MDOT GRANULAR MATERIAL CLASS II OR FLOWABLE FILL, OR AS DIRECTED BY THE ENGINEER

18" MIN

12" MIN OR AS OTHERWISE SPECIFIED

PIPE BEDDING MATERIAL

COMPACTED SAND OR FLOWABLE FILL SHALL EXTEND FOR 9" EACH SIDE OF EXISTING PIPE & SHALL SLOPE OUT AT 1:1 (45°) SLOPE TO THE BOTTOM OF THE TRENCH

9" 6" 9"

18"

12" MIN OR AS OTHERWISE SPECIFIED

PIPE BEDDING MATERIAL

SECTION A

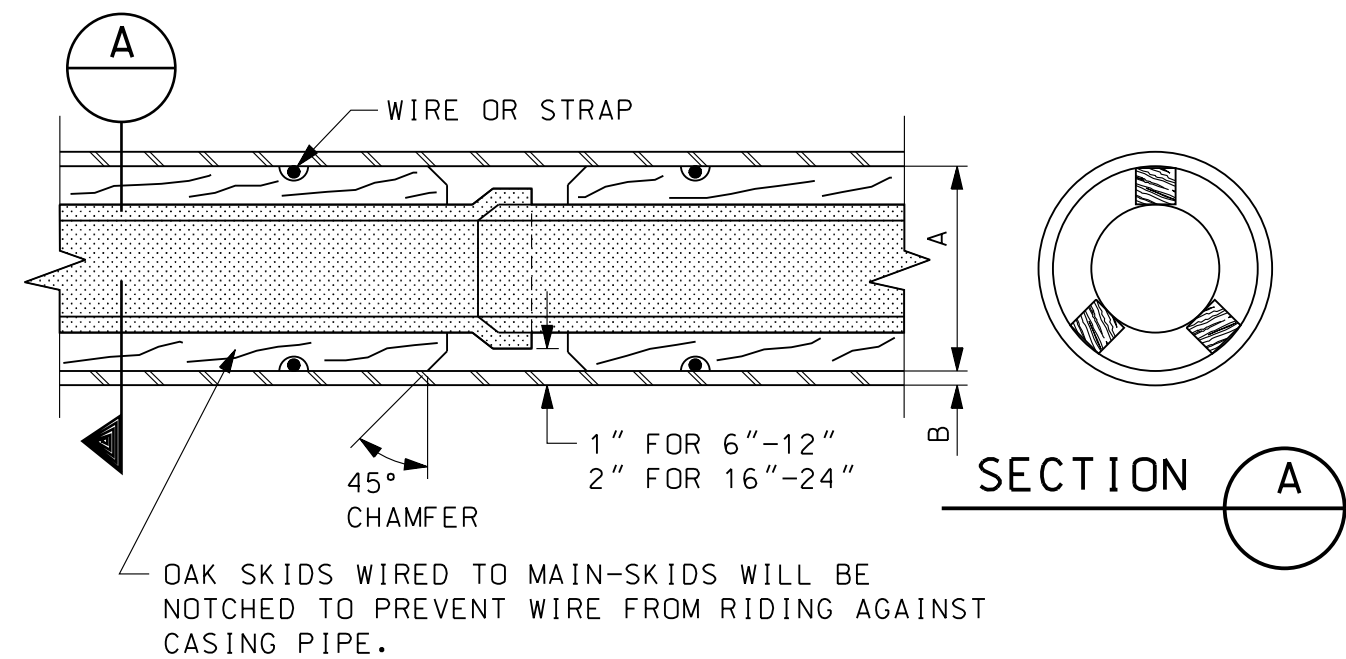
SCALE: NONE

## GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRECONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE COMMUNITY, IN WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF ALL PERMITS NECESSARY TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE WATER SUPPLY, SANITARY SEWER, OR STORM SEWER SYSTEMS.
3. THE CONTRACTOR SHALL MAINTAIN HIS CONSTRUCTION OPERATIONS WITHIN THE PRESENTLY EXISTING ROAD RIGHTS-OF-WAY AND EASEMENTS AS NOTED ON THE PLANS THROUGHOUT THE PROJECT. IN THE EVENT THAT THE CONTRACTOR DEEMS IT NECESSARY OR ADVISABLE TO OPERATE BEYOND THE LIMITS OF THE EXISTING RIGHTS-OF-WAY OR EASEMENTS, HE SHALL BE RESPONSIBLE FOR MAKING SPECIAL WRITTEN AGREEMENTS WITH THE PROPERTY OWNERS AND SHALL FURNISH SUCH COPIES OF AGREEMENTS TO THE COMMUNITY AND ENGINEER.
4. THE CONTRACTOR SHALL NOTIFY "MISS DIG" (800-482-7111) 3 DAYS (NOT INCLUDING HOLIDAYS OR WEEKENDS) BEFORE STARTING CONSTRUCTION. HE SHALL MAKE ANY NECESSARY ARRANGEMENTS WITH UTILITY COMPANIES FOR RELOCATION OF EXISTING UTILITIES. THESE ARRANGEMENTS SHALL BE MADE IN SUFFICIENT TIME TO ALLOW THE RELOCATION WORK TO BE COMPLETED WITHOUT INTERFERING WITH OR DELAYING THE SEWER CONSTRUCTION.
5. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND THE ENGINEER 48 HOURS PRIOR TO UNCOVERING ANY EXISTING UTILITIES.
6. ON ALL WORK WITHIN THE WAYNE COUNTY RIGHT-OF-WAY, THE COMMUNITY 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.
7. THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC AT ALL TIMES AS PER THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
8. THE CONTRACTOR SHALL AT ALL TIMES PROVIDE EMERGENCY ACCESS TO PROPERTY IN THE VICINITY OF THE CONSTRUCTION FOR POLICE AND FIRE EQUIPMENT, AMBULANCES OR OTHER EMERGENCY VEHICLES TO PROTECT LIFE, HEALTH AND PROPERTY.
9. THE CONTRACTOR SHALL MAINTAIN PUBLIC ROADS AFFECTED BY THE CONSTRUCTION OPERATIONS IN A PASSABLE CONDITION UNTIL SUCH TIME AS FINAL RESTORATION OF THESE IMPROVEMENTS CAN BE MADE. IF THE PUBLIC SAFETY IS IN DANGER OR THE NECESSITY EXISTS FOR MAINTAINING TRAFFIC, BACKFILLING MUST BE COMPLETED IMMEDIATELY. IN THE EVENT THAT THE NECESSARY BACKFILL MATERIAL AND EQUIPMENT ARE NOT AVAILABLE WHEN DIRECTION IS GIVEN FOR IMMEDIATE BACKFILL, THE TRENCH SHALL BE BACKFILLED WITH NATIVE MATERIAL TO PROVIDE FOR THE NECESSARY MAINTENANCE OF TRAFFIC AND SAFETY; HOWEVER, THE NATIVE MATERIAL SHALL BE REMOVED WITHIN 48 HOURS AND THE TRENCH PROPERLY BACKFILLED.

## GENERAL NOTES CONTINUED

- |  |   |
|--|---|
| <p>NO STREET, ROAD OR SECTION THEREOF SHALL BE CLOSED TO THROUGH TRAFFIC UNLESS AUTHORIZED BY THE AGENCY WITH JURISDICTION OVER THE ROADS. PRIOR TO CLOSING A STREET, ROAD, OR SECTION THEREOF, THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY OF A DETOUR PLAN APPROVED BY THE AGENCY HAVING JURISDICTION OVER THE ROADS.</p> <p>11. IN THE EVENT ROADS ARE TO BE CLOSED, THE CONTRACTOR SHALL NOTIFY THE LOCAL FIRE DEPARTMENT, POLICE DEPARTMENT, LOCAL ROAD AUTHORITY, AMBULANCE AND EMERGENCY SERVICES, DEPARTMENT OF PUBLIC WORKS, PUBLIC TRANSIT AUTHORITY, PUBLIC SCHOOL SYSTEM, LOCAL TRASH PICKUP AUTHORITY, AND PUBLIC AND PRIVATE UTILITIES DAILY AS TO WHAT STREETS WILL BE PARTLY BLOCKED OR CLOSED, THE LENGTH OF TIME THE STREETS WILL BE BLOCKED OR CLOSED AND WHEN THE STREETS WILL BE REOPENED TO TRAFFIC.</p> <p>12. PAVED STREETS AND DRIVEWAYS SHALL BE MAINTAINED IN A REASONABLE STATE OF CLEANLINESS AND THE CONTRACTOR SHALL REMOVE ACCUMULATIONS OF DEBRIS CAUSED BY HIS OPERATIONS. THE CONTRACTOR SHALL HAVE, AS A MINIMUM, AN OPERATING SWEEPER BROOM ON THE SITE AT ALL TIMES. THE PAVEMENT SHALL BE CLEANED AT THE CLOSE OF EACH DAYS OPERATION AND AS OFTEN AS NECESSARY BEFORE THAT TIME. FAILURE TO COMPLY SHALL BE CAUSE TO STOP CONSTRUCTION. CONTRACTOR SHALL ALSO COMPLY WITH THE LOCAL AIR POLLUTION CONTROL ORDINANCE.</p> <p>13. ALL GRAVEL AND DIRT ROADS, STREETS OR DRIVEWAYS USED SHALL BE MAINTAINED BY GRADING, PLACING DUST PALLIATIVES, AND MAINTENANCE GRAVEL IN SUFFICIENT QUANTITIES TO ELIMINATE DUST AND MAINTAIN TRAFFIC AS DIRECTED BY THE AGENCY.</p> <p>14. CONTRACTOR SHALL PROVIDE ALL NECESSARY SHEETING, SHORING, DEWATERING, BRACING, TRENCH BOXES, ETC., TO PERFORM WORK SAFELY AND PROTECT EXISTING UTILITIES AND IMPROVEMENTS.</p> <p>15. THE FLOW IN THE EXISTING SEWERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. 16. CULVERTS, DITCHES, DRAIN TILES, TILE FIELD, DRAINAGE STRUCTURES, ETC., THAT ARE DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY RESTORED.</p> <p>16. ALL PROPERTY IRONS AND MONUMENTS, IF DISTURBED OR DESTROYED BY THE CONTRACTOR'S OPERATION, SHALL BE REPLACED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.</p> <p>17. AFTER ALL THE PIPE, STRUCTURES, ETC., HAVE BEEN LAID, CONSTRUCTED, AND BACKFILLED, THE SYSTEM SHALL BE TESTED AND FINAL INSPECTED. THE INSPECTION AND TESTING SHALL CONSIST OF A FIRST INSPECTION, TELEVISION INSPECTION (IF APPLICABLE) TESTING, AND FINAL INSPECTION AND MEASUREMENT. THE CONTRACTOR SHALL PROVIDE THE NECESSARY SUPERVISION, LABOR, TOOLS, EQUIPMENT, AND THE MATERIALS NECESSARY FOR THE TESTS WHICH SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER. HE ENGINEER SHALL BE NOTIFIED TWO (2) WORKING DAYS IN ADVANCE OF ALL TESTING.</p> | <p>18. THE FIRST INSPECTION SHALL BE COMPLETED AND ALL REPAIRS MADE IN AMPLE TIME SO THAT THE TELEVISION INSPECTION OF THE UNDERGROUND PORTION OF THE SYSTEM CAN BE COMPLETED WITHIN FOUR (4) WEEKS OF THE COMPLETION OF THE CONSTRUCTION. WHEN RE-TELEVISION IS NECESSARY, AN ADDITIONAL TWO (2) WEEKS WILL BE ALLOWED FOR COMPLETION. TESTING OF THE SYSTEM AS HEREIN DESCRIBED SHALL IMMEDIATELY FOLLOW THE TELEVISION INSPECTION AND SHALL BE COMPLETED WITHIN A TWO (2) WEEK PERIOD.</p> <p>19. FAILURE TO MAINTAIN A SCHEDULE IN COMPLIANCE WITH THESE TERMS WILL AUTOMATICALLY CAUSE THE STOPPAGE OF OTHER WORK AT THE PARTICULAR SITE IN QUESTION UNTIL SUCH TIME AS THE FINAL INSPECTION OF THE COMPLETED UNDERGROUND PORTION OF THE SYSTEM HAS PROGRESSED TO ACCEPTABLE LIMITS.</p> <p>20. THE CONTRACTOR SHALL HAVE THE UNDERGROUND PORTION OF THE SEWER SYSTEM READY FOR THE FIRST INSPECTION WITHIN TWO (2) WEEKS AFTER THE COMPLETION OF UTILITY.</p> <p>21. THE FIRST INSPECTION SHALL CONSIST OF A VISIBLE AND AUDIBLE CHECK OF SEWERS, MANHOLES, GATE WELLS, AND OTHER STRUCTURES TO ASCERTAIN THAT THE STRUCTURE STEPS HAVE BEEN PLACED, ALL LIFT HOLES PLUGGED, THE CHANNELING OF THE MANHOLE BOTTOMS COMPLETED, ALL VISIBLE OR AUDIBLE LEAKS STOPPED, ALL PIPE HAS BEEN PLACED STRAIGHT AND TRUE TO THE PROPER GRADES AND ELEVATION, THE REQUIRED ADJUSTING RINGS AND FRAME AND COVER PROPERTY INSTALLED, ALL TRENCHES AND STRUCTURES BACKFILLED IN AN ACCEPTABLE MANNER AND THAT THE SYSTEM HAS BEEN THOROUGHLY CLEANED.</p> <p>22. THE FIRST INSPECTION SHALL BE CONSIDERED COMPLETED WHEN ALL TREE PAIRS HAVE BEEN MADE AND THE SYSTEM IS READY FOR A TELEVISION INSPECTION AND SUBSEQUENT TESTING.</p> <p>23. TRENCH BACKFILL UNDER ROAD SURFACES, PAVEMENTS, CURBS, DRIVEWAY, SIDEWALK AND WHERE THE TRENCH EDGE IS WITHIN 3-FEET OF THE PAVEMENT SHALL BE TRENCH B (SAND) PER SPECIFICATIONS SECTION 312333, TRENCHING AND BACKFILLING.</p> <p>24. AFTER ALL TESTING, TELEVISION INSPECTION, FINAL RESTORATION AND CLEAN-UP HAS BEEN COMPLETED, A FINAL INSPECTION AND MEASUREMENT WILL BE DONE. THE FINAL INSPECTION SHALL BE REQUESTED BY THE CONTRACTOR AND CONSIST OF, BUT IS NOT LIMITED TO, CHECKING FOR PROPER ALIGNMENT, PROPER GRADE, CLEANLINESS, LEAKS, CONFORMANCE TO THE PLANS AND SPECIFICATION, PROPER STRUCTURAL AND MECHANICAL ADJUSTMENTS, AND RESTORATION. FINAL MEASUREMENT INCLUDES STRUCTURE ELEVATIONS, DISTANCES BETWEEN STRUCTURES, AND CONFIRMATION UTILITIES ARE LOCATED WITHIN EASEMENT AND RIGHT-OF-WAY AREAS.</p> <p>25. SUCCESSFUL COMPLETION OF ANY TEST OR INSPECTION SHALL NOT RELIEVE THE CONTRACTOR FROM THEIR RESPONSIBILITY TO CORRECT ANY DEFICIENCY OR NONCONFORMANCE TO THE PLANS OR SPECIFICATIONS WHICH MAY THEREAFTER BECOME KNOWN.</p> |
|--|---|



DIA OF SEWER	DIA OF MAIN	MIN "A"	ROAD CROSSING MIN "B"	RAILROAD CROSSING MIN "B"
	6"	16"	.375	.375
	8"	16"	.375	.375
	12"	20"	.375	.438
10"	16"	24"	.375	.500
12" & 15"	20"	30"	.375	.500
18"	24"	36"	.375	.500

CASING PIPE SHALL BE WELDED STEEL PIPE  
A.S.T.M. A-252, GR 2 UNLESS OTHERWISE  
SPECIFIED.

- NOTES:
1. NO WATER SHALL BE USED IN BORING UNDER RAILROADS.
  2. MAINTAIN MINIMUM OF 5'-6" OF COVER BETWEEN BASE OF RAIL AND TOP OF CASING.
  3. THE ENDS OF THE CASING SHALL BE SUITABLY PROTECTED AGAINST THE ENTRANCE OF FOREIGN MATERIAL, BUT SHALL NOT BE TIGHTLY SEALED.
  4. WHEN BORING ALL VOIDS OUTSIDE OF CASING PIPE SHALL BE FILLED BY MEANS OF PRESSURE GROUTING WITH 1:3 CEMENT-SAND MORTAR. THIS WORK MUST BE ACCOMPLISHED WITHIN 24 HOURS AFTER THE CROSSING HAS BEEN COMPLETED. BORING SHALL EXTEND A MINIMUM OF 10 FEET OUTSIDE THE EDGES OF THE PAVEMENT.
  5. SKIDS ARE TO BE MINIMUM OF 80% OF PIPE LENGTH.
  6. CASING SPACERS AS ALLOWED BY THE ENGINEER.

**TRENCH A OR B**  
BACKFILL PER SPECIFICATIONS

3500 P.S.I. CONCRETE ARCH

CRUSHED ANGULAR NATURAL STONE BEDDING MDOT 21AA

(PLAIN CONCRETE)  
MIN WIDTH OF ARCH  
O.D. +8 INCHES OR  
1-1/4 O.D. WHICHEVER  
IS GREATER

LOAD FACTOR: 1.9  
**CLASS "R-A"**

**TRENCH A OR B**  
BACKFILL PER SPECIFICATIONS

3500 P.S.I. CONCRETE ARCH

GRANULAR MATERIAL.  
COMPACT TO 95% OF  
MAXIMUM UNIT WEIGHT

LOAD FACTOR: 1.9  
**CLASS "R-B"**

**TRENCH A OR B**  
BACKFILL PER SPECIFICATIONS

NATURAL BANK RUN  
SAND MEETING THE  
REQUIREMENT OF  
MDOT CLASS II  
GRANULAR MATERIAL.  
COMPACT TO 95% OF  
MAXIMUM UNIT WEIGHT

MAX WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE
6" THRU 12" PIPE - 30" WIDE
15" THRU 36" PIPE - O.D. +16"
42" THRU 60" PIPE - O.D. +20"

LOAD FACTOR: 1.9  
**CLASS "R-C"**

TRENCH A OR B  
BACKFILL PER  
SPECIFICATIONS

12" MIN

4" MIN

CRUSHED ANGULAR  
NATURAL STONE  
BEDDING MDOT 21AA

CLASS "F-I"

TRENCH A OR B  
BACKFILL PER  
SPECIFICATIONS

12" MIN

4" MIN

CRUSHED ANGULAR  
NATURAL STONE  
BEDDING MDOT 21AA

CLASS "F-II"

TRENCH A OR B  
BACKFILL PER  
SPECIFICATIONS

12" MIN

4" MIN

NATURAL BANK RUN  
SAND MEETING THE  
REQUIREMENT OF  
MDOT CLASS II  
GRANULAR MATERIAL.  
COMPACT TO 95% OF  
MAXIMUM UNIT WEIGHT

CLASS "F-III"

MINIMUM WIDTH OF TRENCH AT 12" ABOVE TOP OF PIPE	
PIPE O.D.	MINIMUM TRENCH WIDTH
UP TO 16"	O.D. + 16"
GREATER THAN 16"	O.D. x 1.25 PLUS 12"

## FLEXIBLE PIPE BEDDING DETAILS

[illegible]

NOT VALID FOR CONSTRUCTION  
UNLESS SIGNED AND DATED:

 WADSWORTH

25251 Northline Rd., PO Box  
Taylor, MI 48180  
734.947.9700/800.482.2864  
FAX: 734.947.9726

© Wood Trim Group, Inc.		BY:		MISCELLANEOUS DETAILS (MD-1 of 1)
-------------------------	--	-----	--	-----------------------------------

VAN BUREN CHARTER  
TOWNSHIP

MISCELLANEOUS DETAILS (MD-1)

ISSUED FOR:      DATE:      BY:

JOB NO.

SHEE

MD-1



PLAN VIEW

END VIEW

SECTION

- NOTES:
1. PLACE DITCH SEDIMENT TRAP PRIOR TO ON-SITE CONSTRUCTION WORK.
  2. MAINTAIN DITCH SEDIMENT TRAP IN GOOD OPERATION DURING PROJECT & REMOVE AT END OF PROJECT.
  3. CHANNEL TO BE RESTORED TO ORIGINAL CONDITION OR BETTER AS DIRECTED BY THE ENGINEER.
  4. CRUSHED STONE INCLUDED WITH DITCH SEDIMENT TRAP.

## DITCH SEDIMENT TRAP

NOT TO SCALE

PLAN VIEW

CROSS-SECTION

SECTION B-B

- NOTE:  
CHECK DAMS GREATER THAN TWO FEET  
IN DEPTH MAY SERIOUSLY IMPACT THE  
FLOW CHARACTERISTICS OF THE DITCH.

## CHECK DAMS

NOT TO SCALE

SILT FENCE

SILT FENCE

NOT TO SCALE

## DRAINAGE STRUCTURE FILTER

NOT TO SCALE

TOP VIEW

SIDE VIEW

### DEWATERING FILTER BAG DETAIL

NOT TO SCALE

## SOIL EROSION AND SEDIMENTATION CONTROL NOTES

1. ALL EROSION AND ANY SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION.
2. ALL SOIL EROSION CONTROL MEASURES SHALL BE CHECKED A MINIMUM OF ONCE PER WEEK AND WITHIN A MINIMUM OF 24 HOURS AFTER EVERY RAINFALL. ANY SOIL EROSION CONTROL MEASURES DAMAGED OR RENDERED INEFFECTIVE SHALL BE IMMEDIATELY REPAIRED OR REMOVED AND REPLACED AT NO ADDITIONAL COST.
3. EROSION AND ANY SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
4. ALL SOIL EROSION AND SEDIMENTATION CONTROL (SESC) DEVICES SHALL BE INSTALLED PRIOR TO CONTRACTOR BEGINNING ANY WORK. ALL SESC DEVICES SHALL BE MAINTAINED IN AN EFFECTIVE, FUNCTIONING CONDITION AT ALL TIMES DURING THE COURSE OF THE WORK. ALL TEMPORARY SESC DEVICES SHALL BE REMOVED AND THE AREA RESTORED AFTER THE PERMANENT SESC MEASURES ARE INSTALLED AND FUNCTIONING.
5. DEBRIS FROM THE PROJECT SHALL BE LEFT ON THE SITE BY DELIVERY OR CONSTRUCTION VEHICLES THROUGH THE USE OF CLEAN STONE EXITS. SHOULD THE STONE BECOME INEFFECTIVE IT WILL BE REPLACED. ALL CONSTRUCTION TRAFFIC WILL USE THE CLEAN STONE EXITS.
6. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDING AREAS WITH UNWEATHERED SMALL GRAIN STRAW OR HAY SPREAD UNIFORMLY AT THE RATE OF 1-1/2 TO 2 TONS PER ACRE. ANCHOR MULCH WITH DISC-TYPE MULCH ANCHORING TOOL OR OTHER MEANS AS APPROVED BY THE AGENCY WITH JURISDICTION.
7. ALL MUD, DIRT, AND DEBRIS TRACKED OR SPILLED ONTO EXISTING ROADS FROM THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
8. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 CALENDAR DAYS AFTER FINAL GRADING OR FINAL EARTH CHANGES HAVE BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE ESTABLISHED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED. ALL DRAIN BANKS DISTURBED BY CONSTRUCTION SHALL BE RESTORED WITHIN FIVE CALENDAR DAYS AND SOD PEGGED IN PLACE.
9. PARTICULAR CARE SHOULD BE TAKEN WHEN WORKING ALONG THE PERIMETER OF THE SITE. IN NO EVENT SHALL WORK AREA EXTEND BEYOND THE LIMITS INDICATED ON THE PLANS.

## SOIL EROSION AND SEDIMENTATION CONTROL NOTES

10. SHOULD IT BE NECESSARY FOR THE CONTRACTOR TO DEWATER THE GROUND IN THE COURSE OF CONSTRUCTING THE PROPOSED UTILITY, THE CONTRACTOR SHALL FILTER ALL DISCHARGE THROUGH A DISCHARGE FILTER BAG. THAT WILL FILTER ALL DISCHARGED WATER FROM THE DEWATERING OPERATION. IN NO INSTANCE SHALL THE DEWATERING DISCHARGE BE PERMITTED TO FLOW UNFILTERED FROM THE CONSTRUCTION SITE.
11. THE CONTRACTOR SHALL CONTROL THE DUST ON THE SITE DURING THE LIFE OF THE CONTRACT. IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE COMMUNITY THIS DUST CONTROL SHALL BE COMPLETED BY THE APPLICATION OF A POSITIVE DUST PICK-UP METHOD WITH WATER ON HARD SURFACES. SUCH DUST CONTROL MATERIALS SHALL BE APPLIED AS OFTEN AS IS NECESSARY IN THE OPINION OF THE COMMUNITY TO CONTROL THE DUST.
12. SHOULD THE SOIL EROSION CONTROL REQUIREMENTS BE NEGLECTED OR NOT ADEQUATELY FOLLOWED, THE COMMUNITY MAY REQUIRE THE CONTRACTOR TO CEASE CONSTRUCTION OPERATIONS AND TO APPLY HIS ENTIRE FORCE TO MEET THE REQUIREMENTS BEFORE PROCEEDING FURTHER WITH THE PROJECT.
13. SOIL EROSION AND SEDIMENTATION CONTROL SHALL BE IN ACCORDANCE WITH PART 91 SOIL EROSION AND SEDIMENTATION CONTROL (SESC), OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED (NREPA).
14. AS SOON AS POSSIBLE, COMPLETE FINAL GRADING AND PLACING OF PERMANENT SOIL EROSION CONTROL DEVICES. AFTER ESTABLISHMENT OF PERMANENT VEGETATION, REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES.

NOTE :

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.


## TEMPORARY GRAVEL CONSTRUCTION

TRANCF /EXIT

NOT TO SCALE

[illegible]

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25251 Northline Rd., PO Box 10  
Taylor, MI 48180  
Tel: 734.947.2864  
Fax: 734.947.5726

VAN BUREN CHARTER  
TOWNSHIP  
STANDARD SOIL EROSION AND  
SEDIMENTATION CONTROL DETAILS (SE-1)

ISSUED FOR: DATE: BY:

JOB NO.

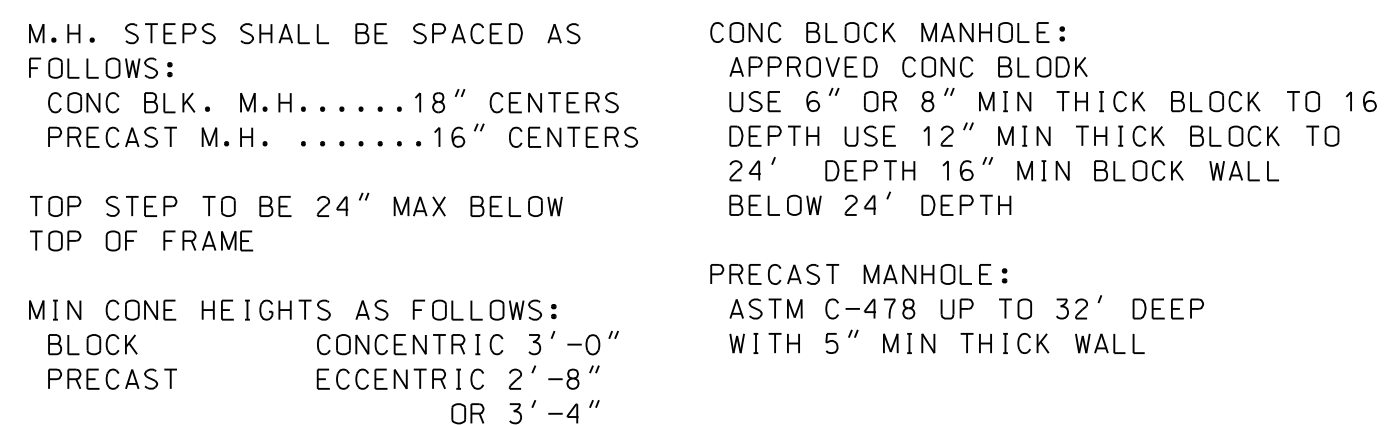
SHEET

SE - 1

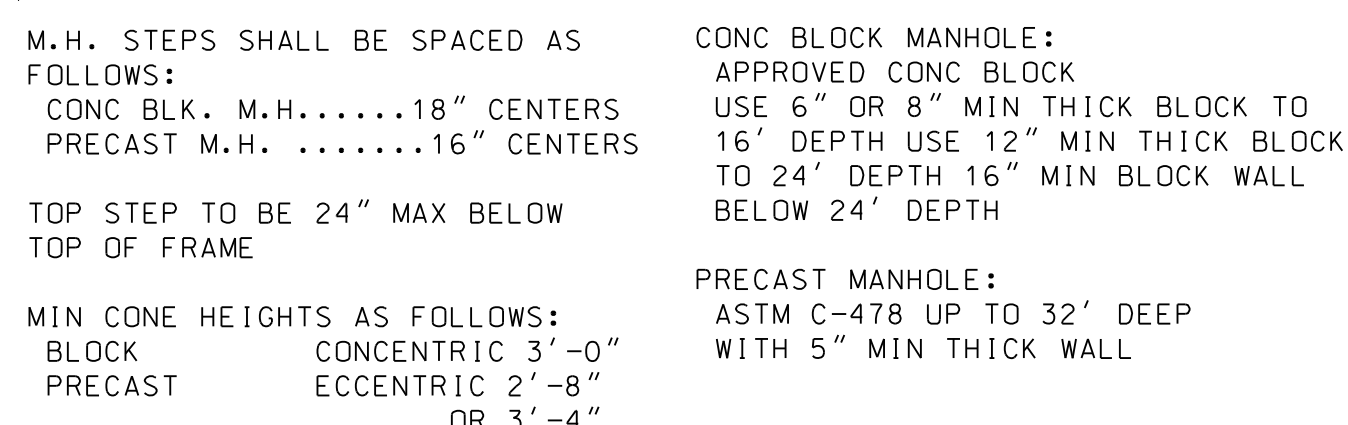
© Wade Trim Group, Inc. STANDARD SOIL EROSION AND SEDIMENTATION CONTROL DETAILS (SF-1 of 1)

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PROJECT MANAGER: - FIELD BOOK INFORMATION: -  
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N.T.S.



N.T.S



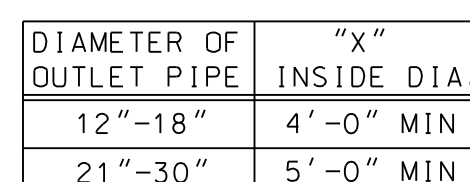
- 
- SEE STORM SEWER NOTES
- 1-3 BRICK COURSES FOR FUTURE ADJUSTMENT
- PLASTER COAT ENTIRE BLOCK STRUCTURE WITH 1/2" CEMENT MORTAR
- 6" CONCRETE BLOCK OR PRECAST CONCRETE
- 12" DIA. MAXIMUM SIZE
- PRECAST 3500 P.S.I. CONC. BASE WITH 4X4-W4X4 WELDED WIRE FABRIC
- BEDDING UNDER STRUCTURE SHALL BE CRUSHED STONE.
- 3'-6" MAX DEPTH
- 2'-0" MIN
- 2" MAX
- 4" MIN
- 3"

STANDARD INLET  
N.T.S.

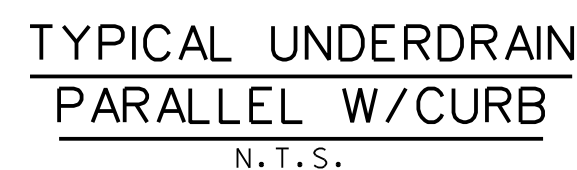


STANDARD MANHOLE FRAME AND COVER  
N.T.S.

\* TOP SLAB  
\*\* 2' SUMP REQ'D FOR MANHOLE  
WITH OUTLET OF 18" & UNDER




## STANDARD CATCH BASIN



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UNLESS SIGNED AND DATED:

---

 **WADE TRIM**

20251 Northline Rd., PO Box 10  
Troyer, MI 48180  
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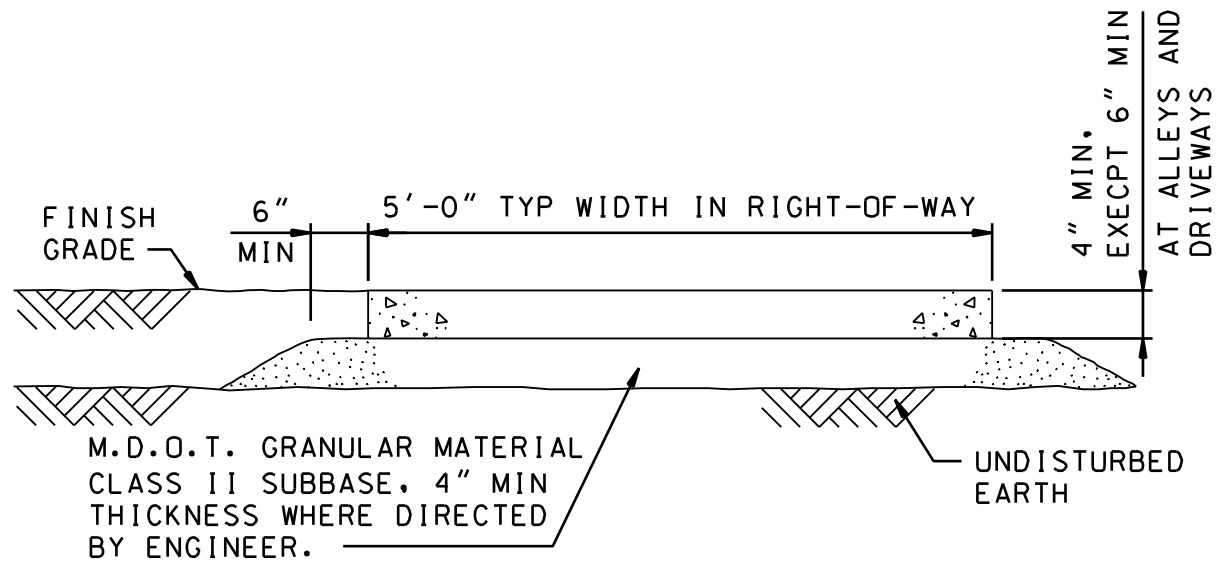
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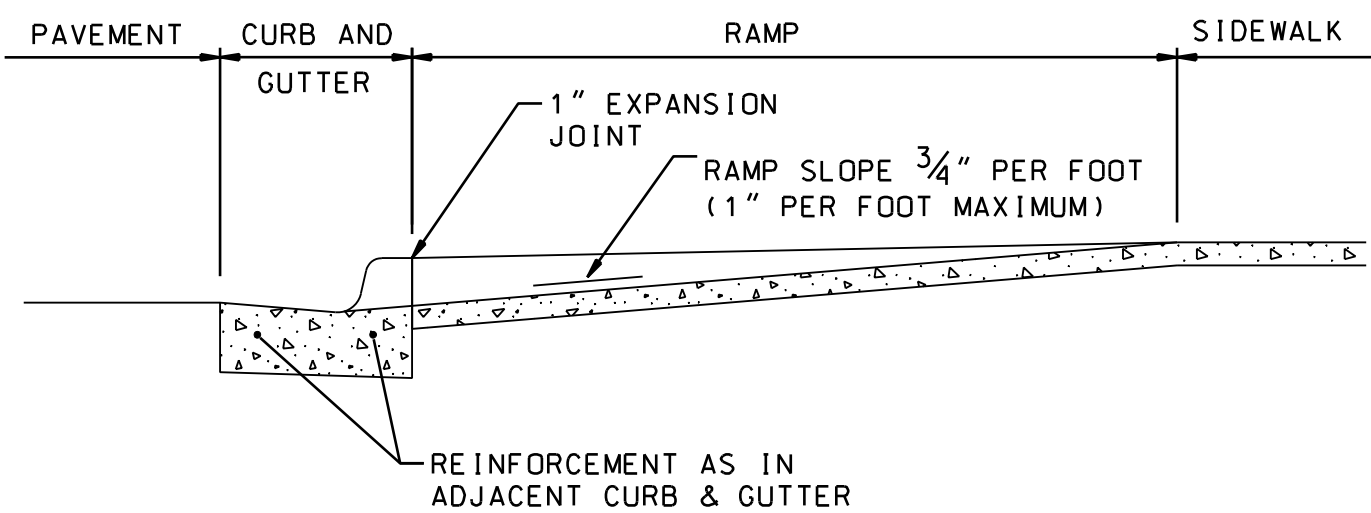
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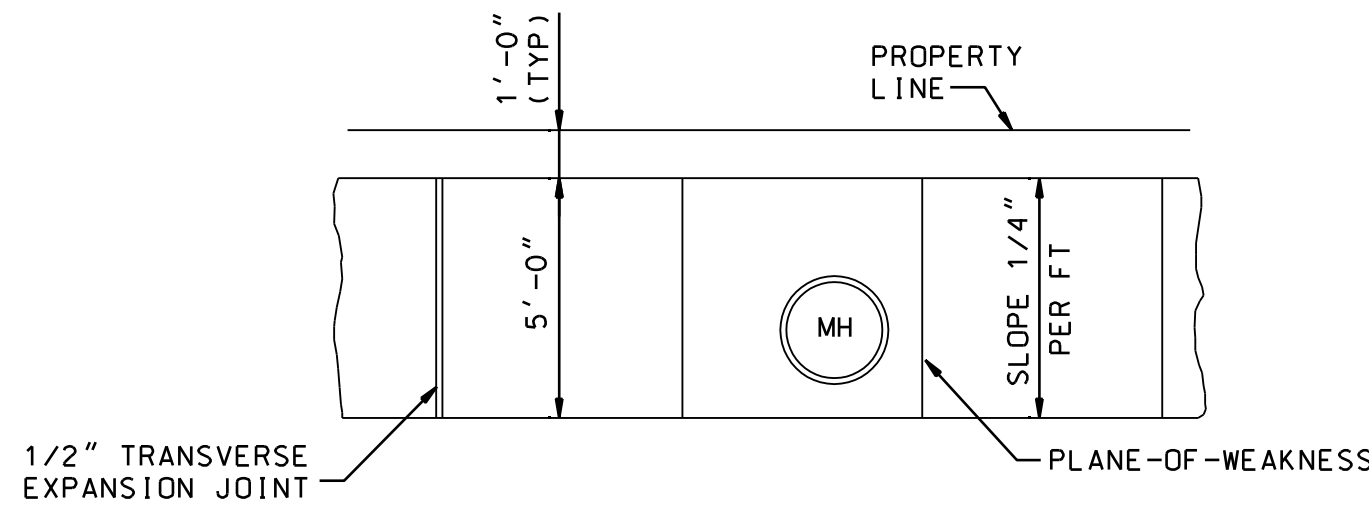
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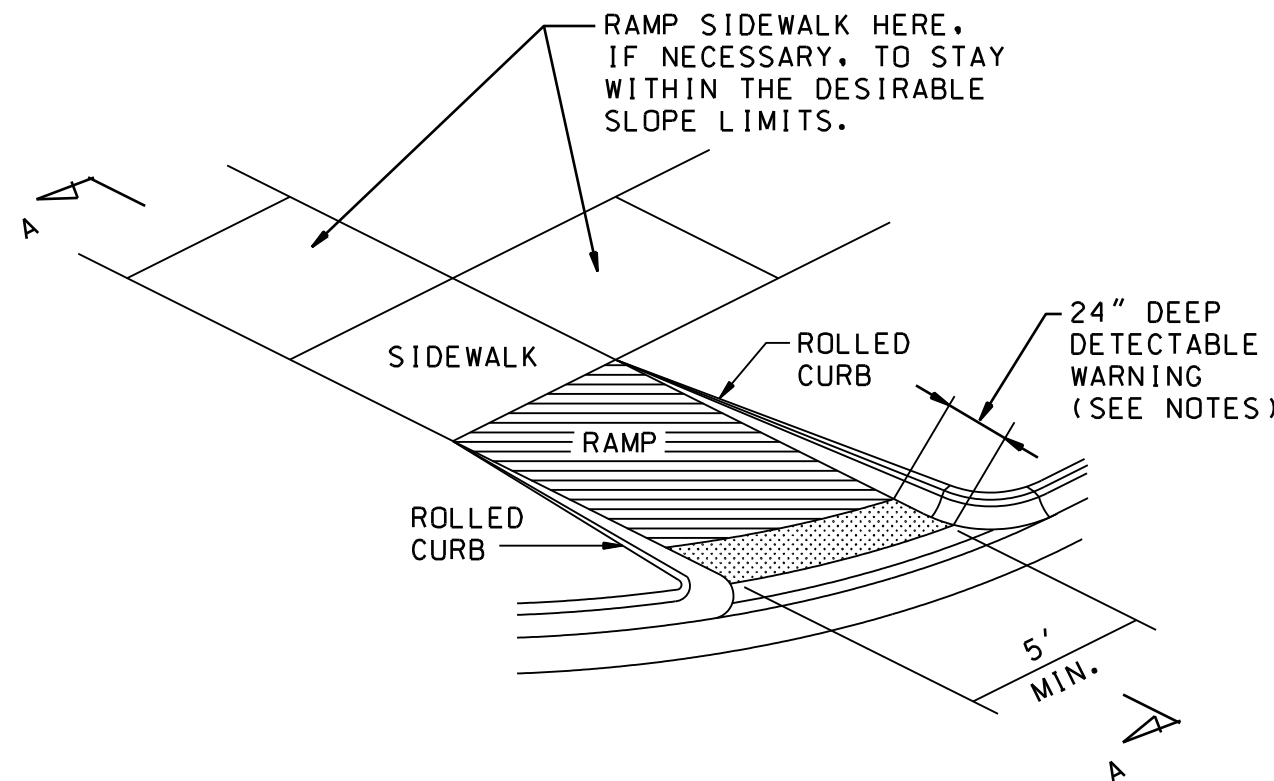
TYPICAL SECTION  
N. T. S.



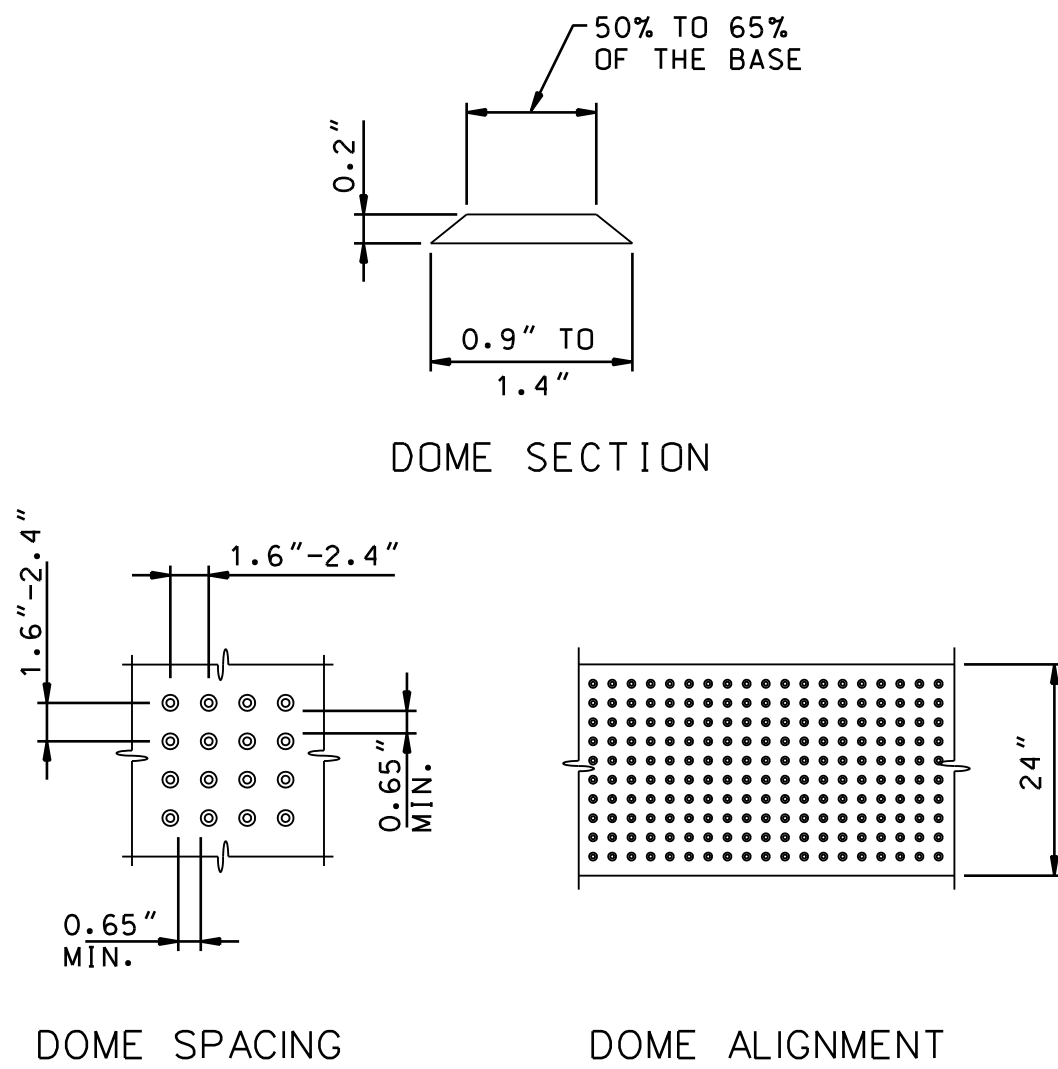
TYPICAL PLAN IN RIGHT-OF-WAY  
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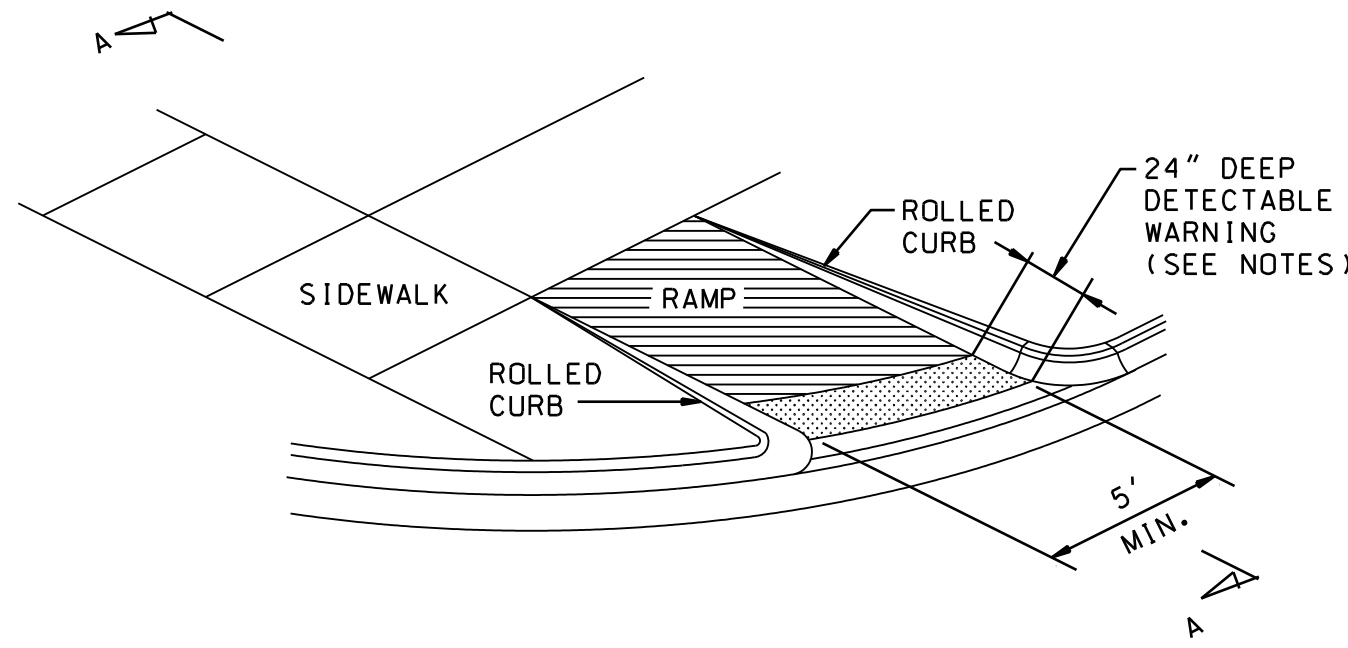
TYPICAL PLAN IN RIGHT-OF-WAY  
N. T. S.



TYPICAL PLAN IN RIGHT-OF-WAY  
N. T. S.



DETECTABLE WARNING DETAILS  
N. T. S.



SIDEWALK RAMP DETAILS  
N. T. S.

## NOTES:

- ONE-HALF INCH TRANSVERSE EXPANSION JOINTS SHALL BE PLACED THROUGH THE SIDEWALK AT UNIFORM INTERVALS OF NOT MORE THAN 50 FEET. ONE-HALF INCH EXPANSION JOINT SHALL ALSO BE PLACED BETWEEN THE SIDEWALK AND ABUTTING PARALLEL CURB, BUILDINGS, RIGID STRUCTURES, CONCRETE DRIVES AND CONCRETE DRIVE APPROACHES. ONE INCH EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK RAMP AND BACK OF CURB.
- PLANE-OF-WEAKNESS JOINTS SHALL BE PLACED EVERY 5 FEET AND BE PRODUCED BY USE OF SLAB DIVISION FORMS EXTENDING TO THE FULL DEPTH OF CONCRETE OR BY CUTTING JOINTS IN THE CONCRETE, AFTER FLOATING, TO A DEPTH OF NOT LESS THAN ONE-FOURTH THE THICKNESS OF THE SIDEWALK. THE CUT JOINTS SHALL BE NOT LESS THAN 1/8 INCH NOR MORE THAN 1/4 INCH IN WIDTH AND SHALL BE FINISHED SMOOTH AND TRUE TO LINE.

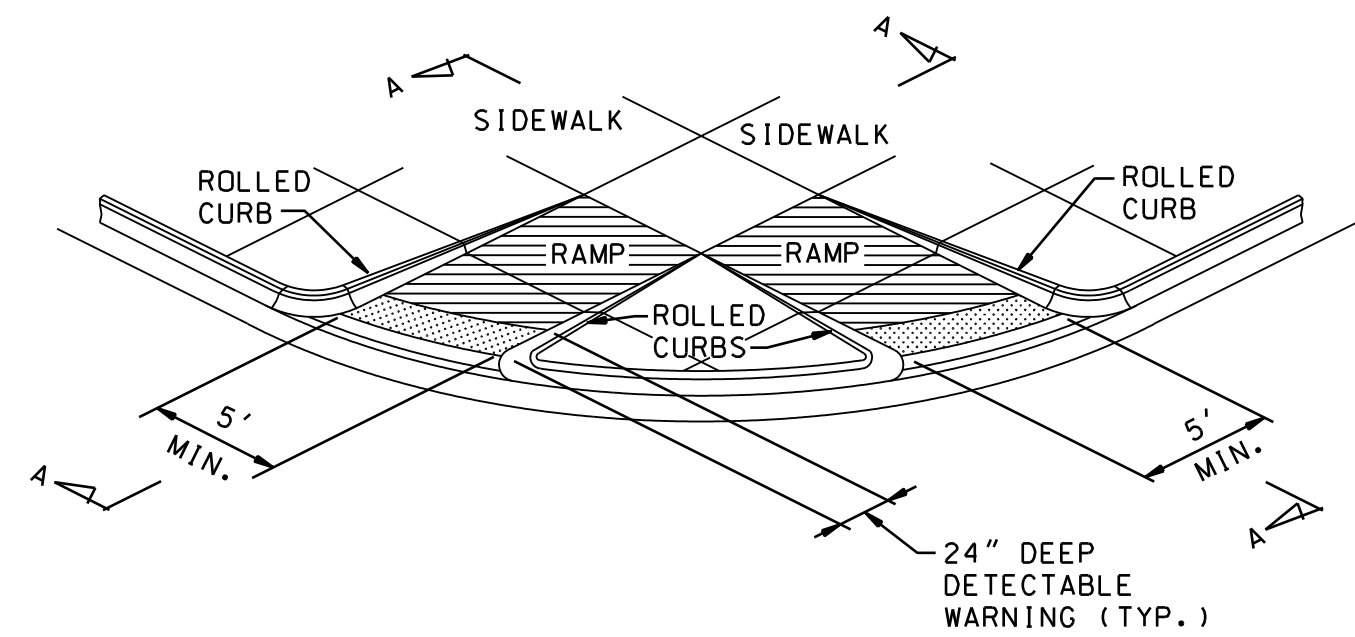
## SIGN NOTES:

- SIGN PANEL SHALL BE 0.080 INCH THICK, ALUMINUM SHEET, TYPE 6061-T6 (MDOT TYPE III).
- HOLES IN SIGN POSTS SHALL BE CONTINUOUS 2" DIA HOLES ON 1-INCH CENTERS.
- POSTS, BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED STEEL.
- SIGN FACE SHALL BE PER THE FOLLOWING TYPE:

TYPE	BACKGROUND	LEGEND
A.	Reflectorized	Reflectorized
B.	Reflectorized	Non-Reflectorized
C.	Non-Reflectorized	Reflectorized

## SIDEWALK RAMP NOTES:

- ALL SIDEWALK RAMP AS CALLED FOR ON THE PLANS SHALL HAVE DETECTABLE WARNINGS.
- DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE.
- DETECTABLE WARNING SHALL BE MODULAR PLASTIC TILE, POLYMER CONCRETE TILE OR OTHER SIMILAR TILE EMBEDDED INTO THE FRESH CONCRETE, AS APPROVED BY THE ENGINEER; OR A STAMPED PATTERN IN THE FRESH CONCRETE WITH INTEGRAL COLOR (NOT SHAKE-ON COLOR). ADHESIVE APPLIED DETECTABLE WARNINGS ARE NOT ACCEPTABLE.
- ALL DETECTABLE WARNINGS SHALL HAVE SKID RESISTANT SURFACE.
- SYSTEM AND COLOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO BEGINNING WORK.



(TWO RAMPS ARE SHOWN)

SIDEWALK RAMP TYPE 4  
N. T. S.

VAN BUREN CHARTER  
TOWNSHIP  
STANDARD SIDEWALK DETAILS (SW-1)

ISSUED FOR: DATE: BY:

JOB NO.

SHEET

SW-1

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WADETRIM

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Troy, MI 48060-4821  
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FAX: 734.947.8726  
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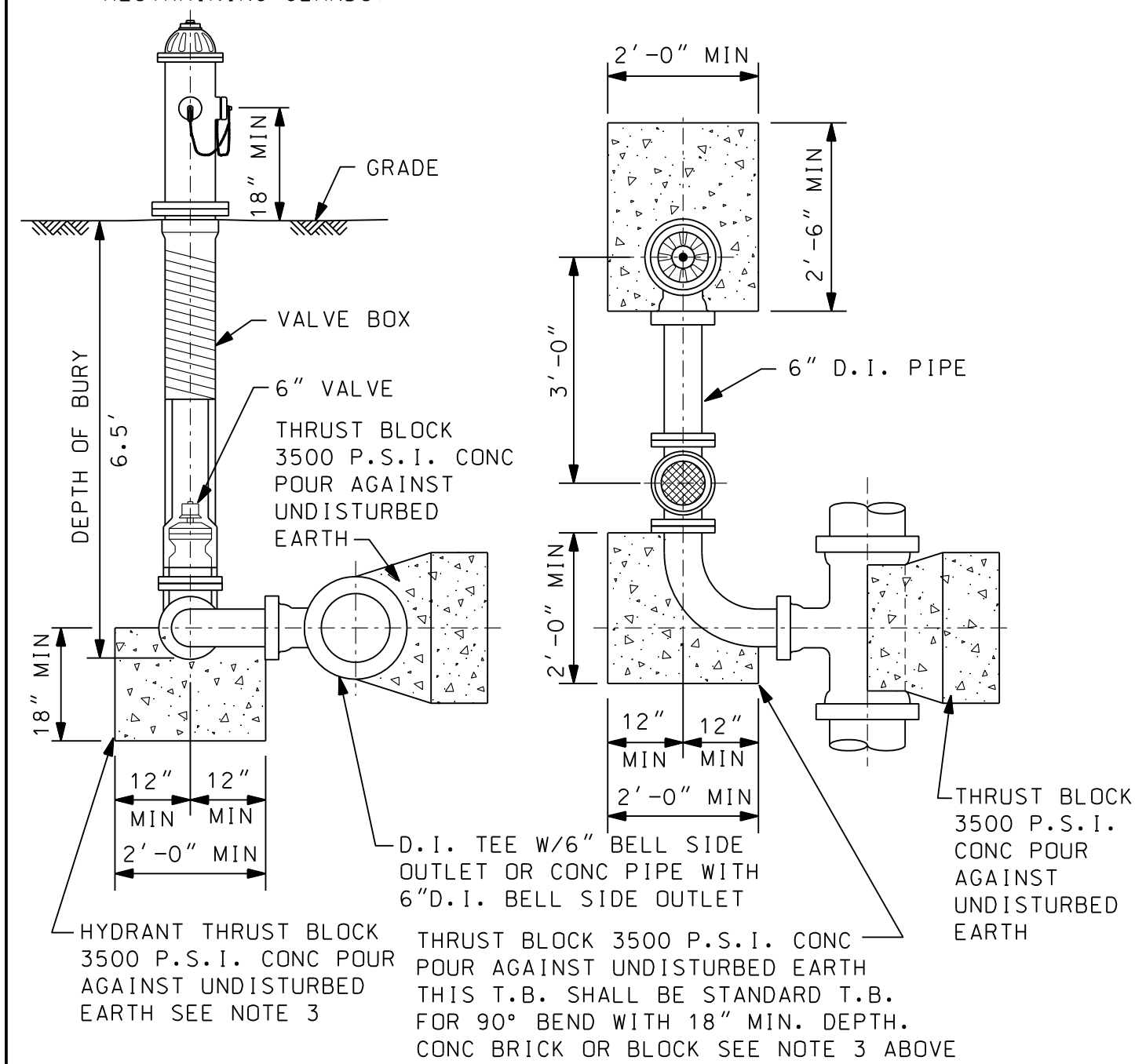




PROJECT MANAGER: \* FIELD BOOK INFORMATION: \*  
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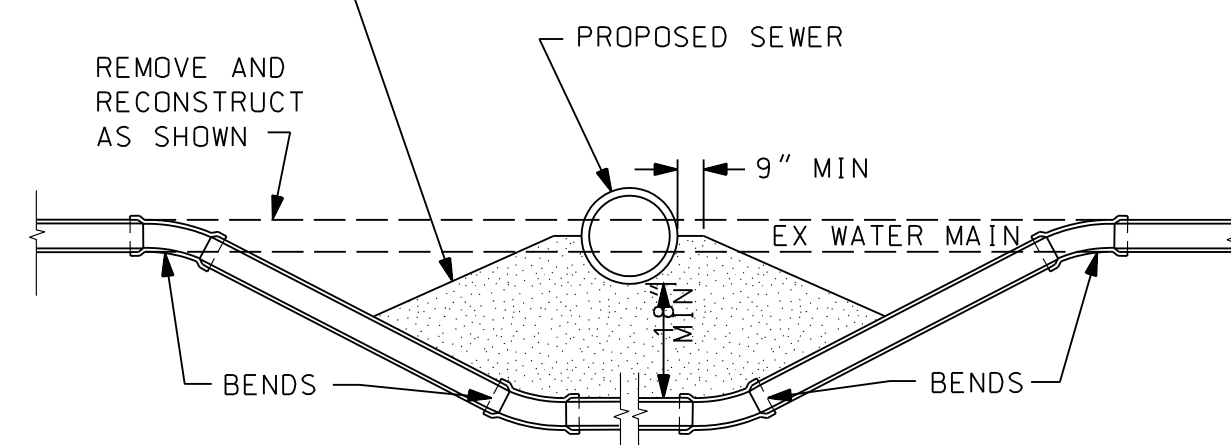
1. INSTALL ADDITIONAL FITTINGS & SPOIGOT PIPE AS NECESSARY BETWEEN WATER MAIN & VALVE BOX TO ADJUST FOR PROPER LOCATION AND GRADE OF HYDRANT.
2. VERTICAL ANCHORAGES WILL BE REQUIRED ON ALL VERTICAL HYDRANT BENDS IN EXCESS OF 11 1/4".
3. WHEN HYDRANTS ARE INSTALLED ON EXISTING MAINS THAT ARE TO BE PLACED BACK INTO SERVICE IMMEDIATELY, PLACE CONCRETE BRICK OR BLOCK TO UNDISTURBED EARTH AND ENCASE WITH CONCRETE OR USE RESTRAINING GLANDS.



## STANDARD FIRE HYDRANT ASSEMBLY CLOSE COUPLE TYPE

N.T.S.

COMPACTED SAND OR FLOWABLE  
FILL SHALL EXTEND FOR 9" EACH  
SIDE OF PROPOSED PIPE AND SHALL  
SLOPE OUT AT 1 ON 4 SLOPE TO  
BOTTOM OF TRENCH, OR AS  
DIRECTED BY ENGINEER



NOTE:  
FOR BEDDING OF WATER MAIN  
SEE STANDARD SAND ENCASEMENT  
CLASS "F-III" THIS SHT.

RELOCATION OF WATER MAIN

N.T.S.

WATER MAIN NOTES

1. ALL WATER SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND GENERAL SPECIFICATION OF THE AGENCY OR AGENCIES HAVING JURISDICTION OF THE WATER SUPPLY SYSTEM AND CONSTRUCTION AREA.
2. WATER MAINS SHALL NOT BE CONSTRUCTED UNDER SIDEWALKS OR ROAD PAVEMENT AREAS.
3. ALL SURFACE STRUCTURES, SUCH AS HYDRANTS, GATE WELLS AND VALVE BOXES SHALL BE SET TO GRADE OR AS INDICATED ON THE PLANS.
4. FIRE HYDRANTS ARE TO BE INSTALLED PLUMB AND HAVE THEIR NOZZLES AS DETERMINED BY THE ENGINEER.
5. ALL FITTINGS SHALL BE DUCTILE IRON, PRESSURE RATING 350 P.S.I., CONFORMING TO ANSI/AWWA C 153/A21.53 COMPACT FITTINGS WITH DOUBLE THICKNESS CEMENT MORTAR LINING AND COAL TAR ENAMEL COATING INSIDE AND OUTSIDE.
6. GATE WELLS AND OTHER WATER MAIN STRUCTURES SHALL NOT BE CONSTRUCTED IN DRIVEWAYS, DRIVE APPROACHES, OR SIDEWALKS.
7. PROVIDE 7-FOOT MINIMUM COVER BELOW EXISTING PAVEMENT CENTERLINE OR GROUND AT WATER MAIN LOCATION, WHICHEVER IS LOWEST, WHEN PROPOSED WATER MAIN IS WITHIN 32 FEET OF CENTERLINE ON SECTION LINE ROADS, OR WITHIN 19 FEET OF CENTERLINE ON 1/4 LINE ROADS. SEVEN FEET COVER SHALL ALSO BE REQUIRED AT OTHER LOCATIONS AS NOTED ON THE PLAN. PROVIDE 6-FOOT MINIMUM COVER BELOW EXISTING ROAD CENTERLINE OR GROUND AT WATER MAIN LOCATION, WHICHEVER IS LOWEST, AT ALL OTHER LOCATIONS UNLESS OTHERWISE NOTED.
8. PLACE NATURAL BANK RUN SAND BACKFILL WITHIN THREE FEET OF ALL STRUCTURES, INCLUDING VALVE WELLS, FIRE HYDRANTS, ETC.
9. ALL WATER MAIN PIPE SHALL HAVE CLASS III BEDDING UNLESS OTHERWISE NOTED ON THE PLANS. SEE SHEET MD-1.
10. ALL PRECAST PRODUCTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
11. CONTRACTOR SHALL BAG ALL NEW FIRE HYDRANTS UNTIL THE WATER MAIN IS ACCEPTED FOR SERVICE.
12. WHEN THE FIRE HYDRANT IS BEING INSTALLED, THE 6-INCH DIAMETER FIRE HYDRANT VALVE SHALL BE INSTALLED IN THE FULL OPEN POSITION.
13. WATER MAIN TO BE PLACED LEVEL THROUGH ALL GATE WELLS.
14. ALL WATER SYSTEM BOLTS ARE TO BE COR-BLUE, MASTIC COATED, OR SPRAY PAINTED WITH UNDER COATING.
15. A FIRE HYDRANT SHOULD BE PLACED AT THE END OF ALL DEAD END WATER MAIN.

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FAX: 734.947.9726

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Taylor, MI 48180

734.947.9700/800.  
FAX: 734.947.9728

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VAN BUREN CHARTER  
TOWNSHIP

STANDARD WATER MAIN DETAILS (WM-2)

ISSUED FOR:      DATE:      BY:

JOB NO.

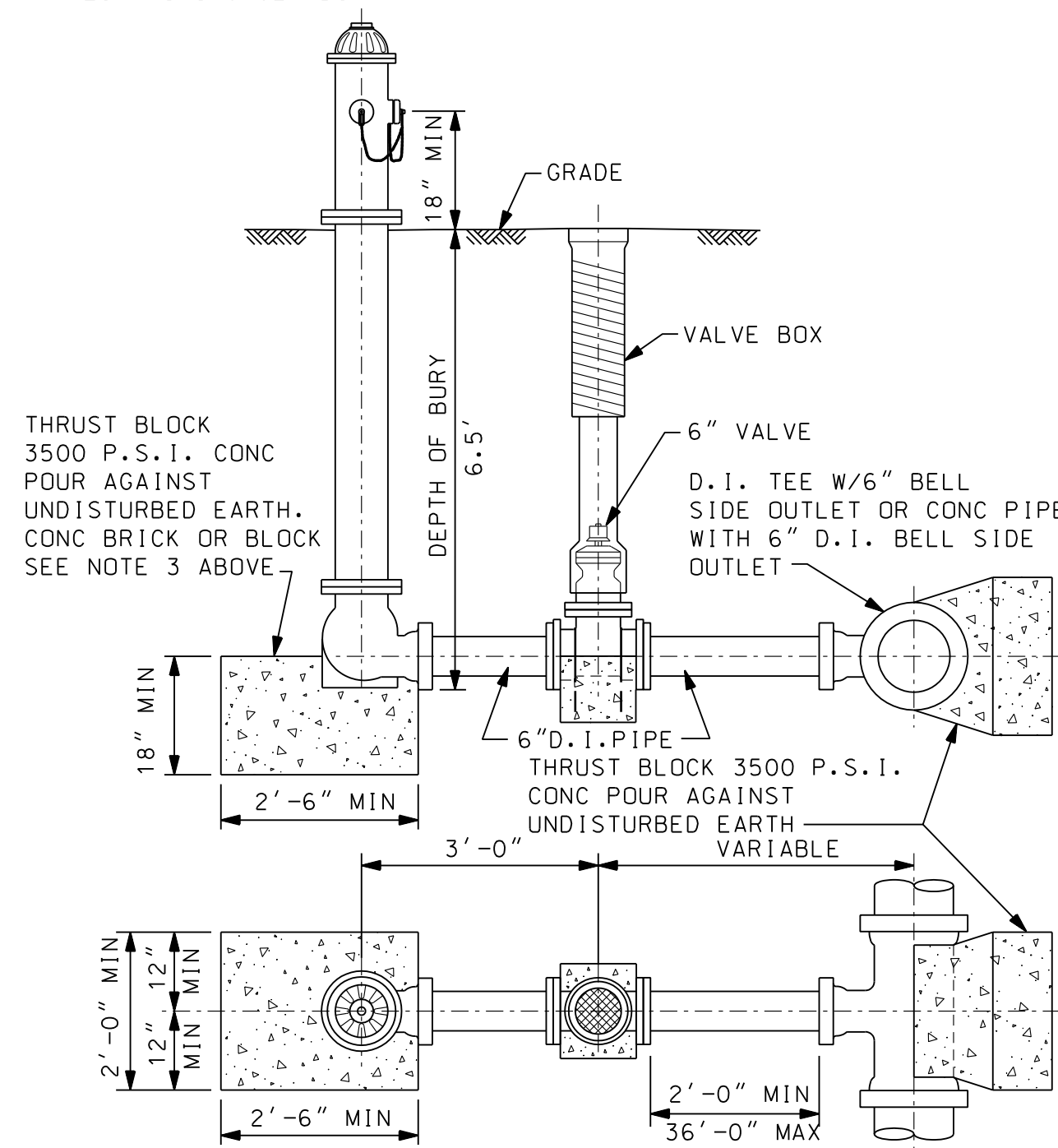
SHEET

WM-2

© Wade Trim Group, Inc. STANDARD WATER MAIN DETAILS (WM-2 of 2)

NOTES:

1. INSTALL ADDITIONAL FITTINGS, BENDS & SPIGOT PIPE AS NECESSARY BETWEEN WATER MAIN & VALVE BOX TO ADJUST FOR PROPER LOCATION AND GRADE OF HYDRANT.
2. VERTICAL ANCHORAGES WILL BE REQUIRED ON ALL VERTICAL HYDRANT BENDS IN EXCESS OF 1' 4".
3. HYDRANTS ARE TO BE INSTALLED ON EXISTING MAINS THAT ARE TO BE PLACED BACK INTO SERVICE IMMEDIATELY. PLACE CONCRETE BRICK OR BLOCK TO UNDISTURBED EARTH AND ENCASE WITH CONCRETE OR USE RESTRAINING GLANDS.



# STANDARD FIRE HYDRANT ASSEMBLY "T" TYPE

N.T.S.

SHOP PAINT RODS W/RUST-OLEUM OR  
 "KROMIK" (SHERWIN-WILLIAMS) OR EQUAL  
 2 PRIME COATS  
 1 TOP COAT

COVER ALL RODS W/MIN  
 6" CONCRETE

BEND

BEND

2' MIN

1.5' MIN

PROP WATERMAIN

"D" SAME  
 AS "L"

5 1/2" DIA

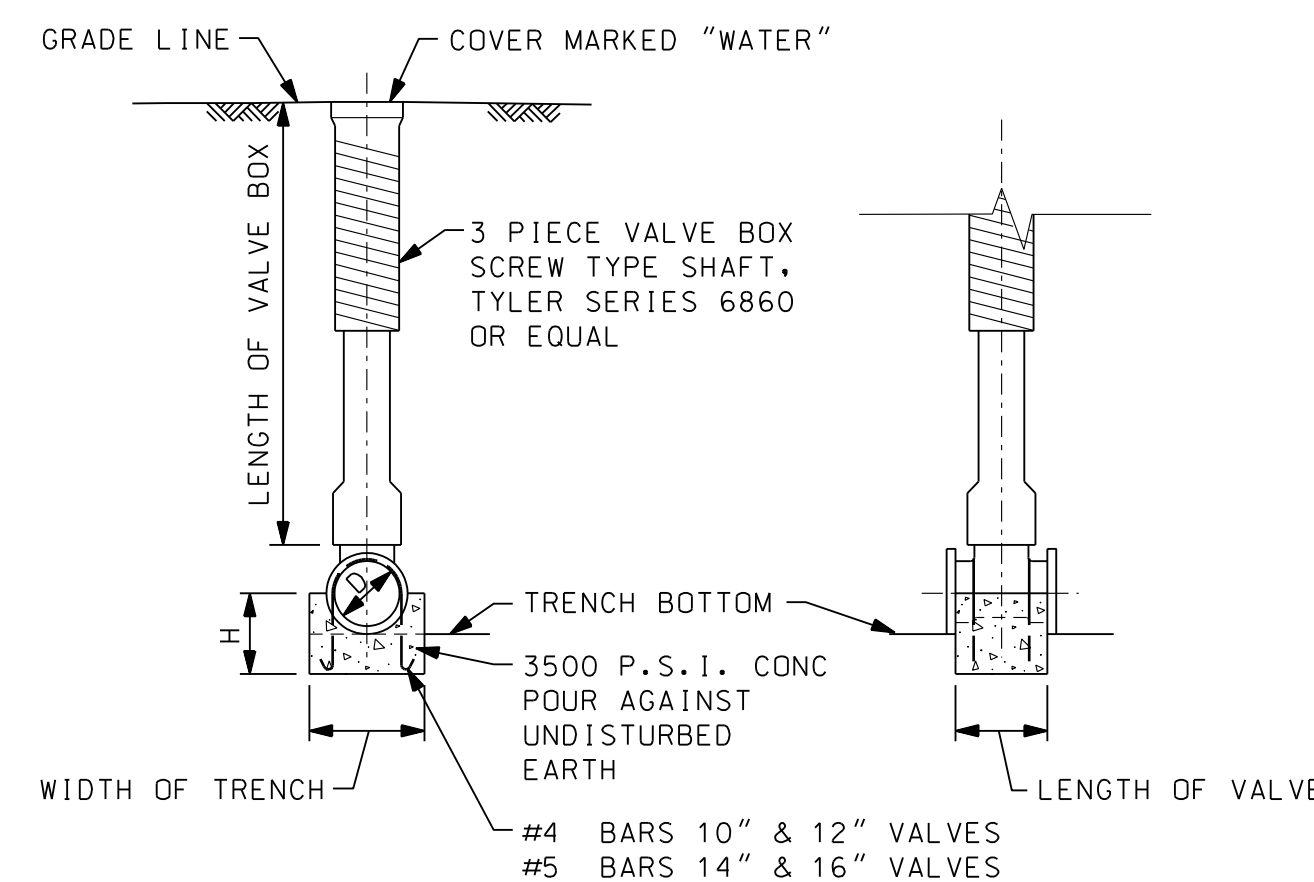
3 3/8" L  
 5 5/8" L

# 7 DEFORMED BARS  
 (ASTM A-305)

NOTE:  
4' MIN COVER ON ALL DITCH CROSSINGS.  
BENDS IF REQUIRED TO BE PLACED PER VERTICAL  
CONCRETE TO BE 3500 P.S.I.

## VERTICAL REACTION BLOCKING

N.T.S.



SIZE OF PIPE	H
6"	6"
8"	8"
10"	10"
12"	12"

### VALVE BLOCK AND BOX DETAIL

N.T.S.

ELECTRICAL SYMBOL LEGEND			
SYMBOL	DESCRIPTION	MANUFACTURER / CATALOG NO.	REMARKS
	NEW ROADWAY LUMINAIRE AND POLE	SEE LUMINAIRE SCHEDULE	—
	NONFUSIBLE DISCONNECT SWITCH	SEE SPECIFICATIONS	SIZE AS NOTED
	FUSIBLE DISCONNECT SWITCH	SEE SPECIFICATIONS	Z=No. POLES; X=SWITCH SIZE; Y=FUSE SIZE; MOUNT AT 5'-0" AFF, UNO
	PANELBOARD (208Y/120V)	SEE PANELBOARD SCHEDULE	—
	CONDUIT UNDERGROUND	—	—
	CONDUIT ABOVE FLOOR	—	—

UNO = UNLESS NOTED OTHERWISE  
 SSP = STAINLESS STEEL PLATE

LUMINAIRE SCHEDULE						
MARK	DESCRIPTION	MANUF./ CATALOG NO.	OR EQUAL BY	LAMPS	VOLTAGE	REMARKS
SL1	NEW LED SITE LIGHT FIXTURE TYPE 3 MEDIUM, 8640 LUMENS, 70 INPUT WATTS, 4000K, 70 CRI, ON 25 FT ROUND TAPERED DARK BRONZE POLE	FIXTURE: LITHONIA DSX1—LED P2—40K—T3M—MVOLT—RPA— PIR—DOBXD, LITHONIA POLE: RTA—25—8G—DM19AS—DOBXD	MCGRAW EDISON, CREE	LED	120V	DUSK TO DAWN OPERATION, OCCUPIED FULL BRIGHTNESS, UNOCCUPIED 30% BRIGHTNESS

### GENERAL NOTES

- SYMBOLS AND GENERAL DESCRIPTIONS IN SYMBOL LEGENDS ARE INDICATED FOR GENERAL REFERENCE ONLY. NOT ALL SYMBOLS ARE USED ON THIS PROJECT. SEE SCHEDULES, SPECIFICATIONS AND PLANS FOR ADDITIONAL INFORMATION, INCLUDING MOUNTING HEIGHTS.
- THESE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE ELECTRICAL DESIGN INTENT. PROVIDE ALL WORK AND MATERIALS THAT ARE REQUIRED FOR COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEMS THAT FULLY MEET THE ELECTRICAL DESIGN INTENT. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE (NEC) AS ADOPTED BY THE AUTHORITY HAVING JURISDICTION. SEE SPECIFICATIONS FOR ADDITIONAL INSTALLATION REQUIREMENTS AND ITEMS THAT MAY BE REQUIRED ABOVE AND BEYOND THE MINIMUM REQUIREMENTS THAT ARE OUTLINED IN THE NEC.
- THOROUGHLY AND CAREFULLY REVIEW ALL DRAWINGS, SPECIFICATIONS, AND WORK SCOPES IN CONTRACT DOCUMENTS PRIOR TO BIDS AND CONSTRUCTION. WHERE THERE ARE CONFLICTS AMONG THE DRAWINGS, SPECIFICATIONS AND WORK SCOPES, THE MORE STRINGENT OR GREATER QUANTITY REQUIREMENTS SHALL APPLY.
- ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
- SEE INDIVIDUAL SPECIFICATION SECTIONS FOR SPECIFIC REQUIREMENTS RELATED TO TESTING, MANUFACTURER STARTUP, TRAINING, ETC. ALL APPLICABLE TESTING AND MANUFACTURER STARTUP REPORTS SHALL BE SUBMITTED AND APPROVED PRIOR TO THE DEVELOPMENT OF ELECTRICAL PUNCH LISTS.
- ALL CONDUCTORS, INCLUDING THE GROUNDED CONDUCTORS (NEUTRALS), SHALL BE LABELED AT ALL ENDS AND JOINTS, WITH THE CORRESPONDING PANELBOARD NAME AND CIRCUIT NUMBER OR OTHERWISE IDENTIFIED TO CORRESPOND WITH THE ASSOCIATED EQUIPMENT MANUFACTURER'S IDENTIFICATION SYSTEM.
- AT A MINIMUM, PROVIDE #8 WIRING FOR SITE LIGHTING, FROM HANDHOLE FUSING TO FIXTURE ON POLE USE #12 WIRING MINIMUM, UNO. MINIMUM CONDUIT SIZE SHALL BE 3/4". UNO. NO MORE THAN (6) CURRENT CARRYING CONDUCTORS SHALL BE ALLOWED IN A RACEWAY, UNO. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE NEC AND MAY BE SHARED. ALL GROUNDED CONDUCTORS (NEUTRALS) SHALL BE TREATED AS CURRENT CARRYING CONDUCTORS.
- PROVIDE A DEDICATED GROUNDED CONDUCTOR (NEUTRAL) FOR EACH BRANCH CIRCUIT. SHARED NEUTRALS ARE NOT ALLOWED.
- INSTALL GREEN, INSULATED, COPPER EQUIPMENT GROUNDING CONDUCTORS IN ALL RACEWAYS INCLUDING ALL FLEXIBLE METAL CONDUITS AND NON-METALLIC RACEWAYS. GREEN INSULATED, EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED WITH ALL FEEDERS AND BRANCH CIRCUITS.
- PROVIDE FIRE STOPPING FOR ALL CONDUIT AND OTHER ELECTRICAL EQUIPMENT PENETRATIONS THROUGH FLOORS, WALLS AND CEILINGS TO MAINTAIN FIRE RATINGS. SEE ARCHITECTURAL FOR THE SPECIFIED FIRE RATINGS OF FLOORS, WALLS, AND CEILINGS.
- LIMIT VOLTAGE DROP IN CONDUCTORS TO 2% FOR FEEDERS AND 3% FOR BRANCH CIRCUITS, ASSUMING FULL LOAD CONDITIONS. VOLTAGE DROP SHALL NOT EXCEED 5% FROM THE ELECTRICAL SERVICE TO THE FURTHEST ELECTRICAL DEVICE.
- CALCULATE AND APPLY THE APPROPRIATE NEC DERATING FACTOR FOR CONDUCTORS INSTALLED IN ROOF MOUNTED CONDUITS.
- PROVIDE THERMAL SEALS IN ALL CONDUITS THAT RUN FROM CONDITIONED SPACES TO UNCONDITIONED SPACES.
- UNLESS NOTED OTHERWISE, ALL CONDUIT AND WIRING SHALL BE CONCEALED. ELECTRICAL CONNECTIONS SHOWN ON DRAWINGS ARE DIAGRAMMATIC AND ARE USED TO ILLUSTRATE CIRCUITING AND WIRING REQUIREMENTS ONLY.
- ALL JUNCTION BOXES SERVING BRANCH CIRCUIT WIRING SHALL BE LABELED TO IDENTIFY THE CIRCUIT(S) ROUTED THROUGH EACH RESPECTIVE JUNCTION BOX BY UTILIZING BRADY LABELS.
- ELECTRICAL EQUIPMENT INSTALLED ABOVE CEILINGS SHALL BE INSTALLED IN READILY ACCESSIBLE LOCATIONS, SUCH AS, BUT NOT LIMITED TO, ABOVE DOORWAYS TO ROOMS. COORDINATE ALL LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS WITH OTHER EQUIPMENT AND THE NEED FOR EXCESSIVELY LONG LADDER REQUIREMENTS TO ACCESS EQUIPMENT AND DIFFICULT AND AWKWARD CLIMBING AND/OR UNNECESSARY BENDING DURING SERVICING OF EQUIPMENT.
- CONDUCTORS INSTALLED IN WIREWAYS THAT CONTAIN MORE THAN 30 CURRENT CARRYING CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE NEC.
- DO NOT USE LOAD CENTERS, PANELBOARDS, SWITCHBOARDS, MOTOR CONTROL CENTERS AND OTHER POWER DISTRIBUTION EQUIPMENT AS RACEWAYS.
- SEE SPECIFICATION SECTION 26 05 34, RACEWAYS FOR ELECTRICAL SYSTEMS, FOR PROJECT SPECIFIC RACEWAY INSTALLATION REQUIREMENTS.
- SEE SPECIFICATION SECTION 26 05 53, IDENTIFICATION FOR ELECTRICAL SYSTEMS, FOR PROJECT SPECIFIC IDENTIFICATION REQUIREMENTS.
- EXISTING ELECTRICAL ITEMS INDICATED IN THE CONTRACT DRAWINGS ARE BASED ON THE OWNER'S LIMITED RECORD DRAWINGS AND THE ENGINEER'S LIMITED FIELD OBSERVATIONS. CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS SHALL VISIT THE SITE TO UNDERSTAND COMPLETELY THE CONDITIONS UNDER WHICH THE WORK SHALL BE PERFORMED. PERFORM ALL INCIDENTAL ELECTRICAL DEMOLITION AND/OR RELOCATION OF DEVICES AND EQUIPMENT REQUIRED TO FACILITATE THE DEMOLITION WORK OF OTHER TRADES AT NO ADDITIONAL COST TO THE OWNER.
- DRAWINGS DO NOT INDICATE ALL ELECTRICAL EQUIPMENT AND DEVICES INTENDED TO BE REMOVED. DRAWINGS INDICATE MAJOR ELECTRICAL EQUIPMENT, FIXTURES AND DEVICES THAT ARE REQUIRED TO BE REMOVED. CONTRACTOR SHALL REMOVE OR RELOCATE ELECTRICAL EQUIPMENT, FIXTURES AND DEVICES AS NECESSARY FOR A COMPLETE AND PROFESSIONAL INSTALLATION. SEE CIVIL PLANS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- UNLESS NOTED OTHERWISE, DISPOSE OF ALL REMOVED MATERIALS OFF SITE AND INCLUDE ALL COSTS FOR DISPOSAL IN BID. THE DISPOSAL OF MATERIALS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS INCLUDING TCLP TESTING.
- EXISTING POLES AND FIXTURES TO BE TURNED OVER TO WMU IF DESIRED. WMU RESERVES RIGHT TO REFUSAL — DISPOSAL BY CONTRACTOR IF REFUSED.
- CIRCUIT CONDUCTORS SHALL HAVE CONTINUOUS COLOR IDENTIFICATION ON ALL CONDUCTORS, ALL SIZES.

## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

### REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By	GAC
Designer	GAC
Reviewer	RMM
Manager	PK2

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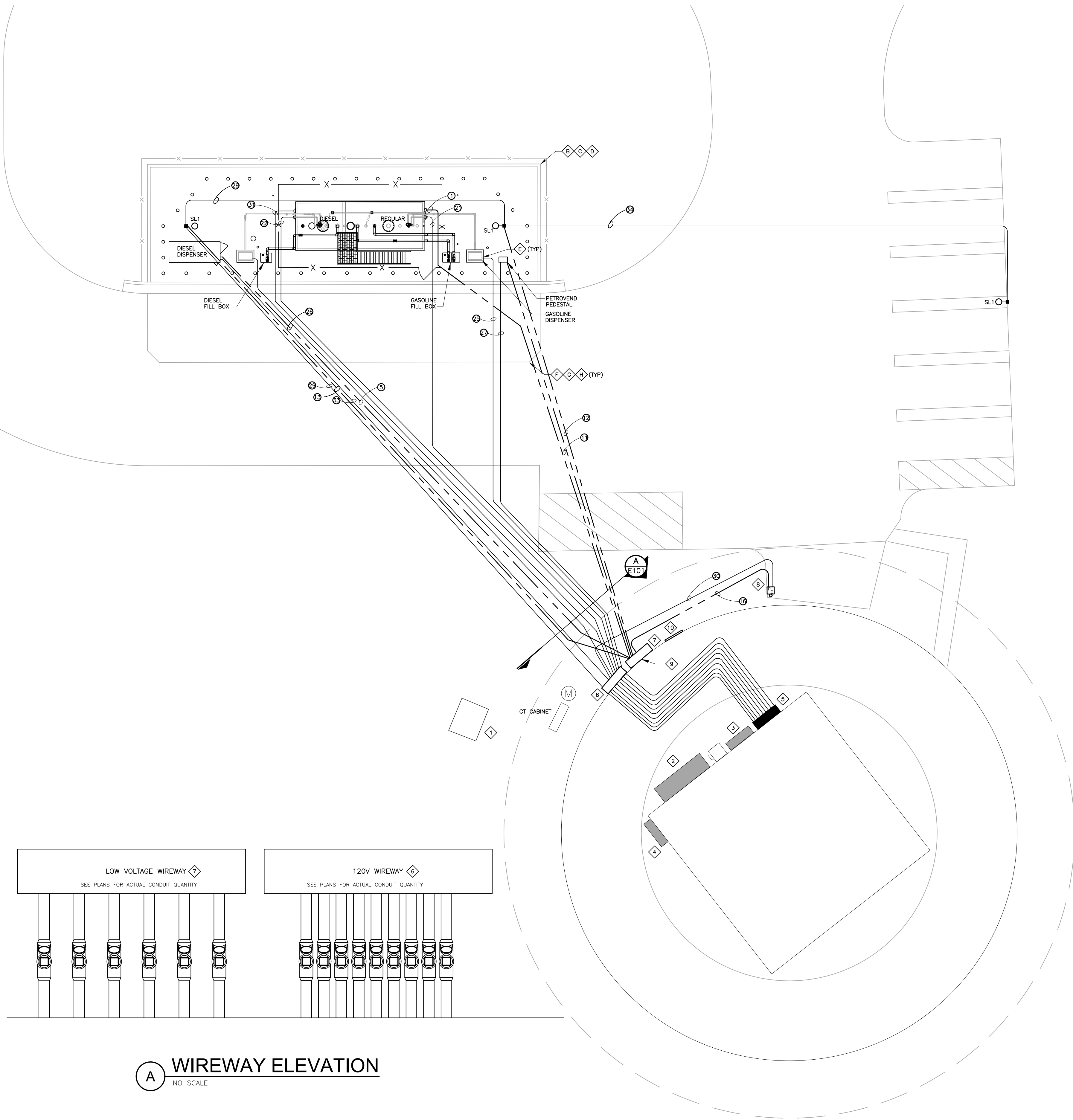
PROJECT NO.

211407

SHEET NO.

# E001





**A WIREWAY ELEVATION**  
NO SCALE



## ELECTRICAL SITE PLAN

SCALE: 1" = 10'

### N.E.C. HAZARDOUS AREA NOTES

- ALL CONDUIT ENTERING AND LEAVING THE CLASSIFIED/HAZARDOUS AREAS SHALL HAVE SEAL-OFFS PER N.E.C. 501.5(A).
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK – FILL OPENING)  
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFIED LOCATION.  
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN A HORIZONTAL RADIUS OF 10 FEET FROM A LOOSE FILL CONNECTION AND WITHIN A HORIZONTAL RADIUS OF 5 FEET FROM A TIGHT FILL CONNECTION.
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK – VENT DISCHARGING UPWARD)  
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: WITHIN 5 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.  
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: SPACE BETWEEN 5 FEET AND 10 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (REMOTE PUMP – OUTDOORS)  
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL IF ANY PART IS WITHIN A HORIZONTAL DISTANCE OF 10 FEET FROM ANY EDGE OF PUMP. EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: WITHIN 3 FEET OR ANY EDGE OF PUMP, EXTENDING IN ALL DIRECTIONS. ALSO UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 10 FEET HORIZONTALLY FROM ANY EDGE OF PUMP.
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE – PITS)  
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFIED LOCATION.
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE – DISPENSER)  
EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION: SPACE CLASSIFICATION INSIDE THE DISPENSER ENCLOSURE IS COVERED IN ANSI/UL 87, "POWER OPERATED DISPENSING DEVICES FOR PETROLEUM PRODUCTS."
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE – DISPENSER)  
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: WITHIN 18 INCHES HORIZONTALLY IN ALL DIRECTIONS EXTENDING TO GRADE FROM (1) THE DISPENSER ENCLOSURE OR (2) THAT PORTION OF THE DISPENSER ENCLOSURE CONTAINING LIQUID HANDLING COMPONENTS.
- TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE – OUTDOOR)  
EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION: UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 20 FEET HORIZONTALLY OF ANY EDGE OF ENCLOSURE.

**NOTE:**  
NO IMC ALLOWED. THE FIRST AND LAST STICK OF EACH CONDUIT WILL BE ROB ROY PVC COATED RIGID METALLIC CONDUIT BELOW GRADE. ALL CONDUIT WILL TRANSITION TO SCHEDULE 40 PVC UNDERGROUND BETWEEN THE FIRST AND LAST STICKS OF ROB ROY PVC COATED RIGID METALLIC CONDUIT

**NOTE:**  
ALL VEEDER ROOT CABLING MUST BE BELDEN 88760 AND WILL TERMINATE AT NEW CONSOLE

**NOTE:**  
ELECTRICAL CONTRACTOR TO TERMINATE ALL NEW FUEL POWER CONDUCTORS INTO NEW FUEL CONTROL PANEL

**NOTE:**  
ALL CONDUITS WILL HAVE SEAL OFFS AS THE FIRST FITTING ABOVE GRADE

### GENERAL NOTES

- REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.
- THIS DRAWING IS DIAGRAMMATIC FOR CIRCUIT GROUPING. IT IS NOT INTENDED TO SHOW EXACT CONDUIT ROUTING. CONDUIT ROUTING SHALL BE ROUTED PARALLEL TO ROADWAYS AND SIDEWALKS.
- REFER TO THE FUEL CONTRACTOR DOCUMENTS FOR FURTHER REQUIREMENTS.
- "HIGH VOLTAGE" IS DEFINED AS 120V TO GROUND.

### KEY NOTES

- EXISTING 150KVA 4.8/13.2–120/208V, 3PH, 4W.
- EXISTING MDP, 400A, 120/208V, 3PH, 4W.
- EXISTING PANEL EM, 1PH.
- EXISTING PANEL A.
- NEW PANEL C. SEE ONE LINE DIAGRAM ON E401, FOR ADDITIONAL INFORMATION.
- NEW 120V NEMA 3R WIREWAY
- NEW LOW VOLTAGE NEMA 3R WIREWAY.
- REMOTE EMERGENCY STOP BOLLARD. COORDINATE EXACT LOCATION WITH OWNER.
- EXTEND LOW VOLTAGE CONDUITS TO LOCATIONS INDICATED BY THE FUEL CONTRACTOR.
- APPROXIMATE LOCATION OF FUEL MONITORING AND CONTROLS.

### REVISIONS

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4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/5/2023	OWNER REVIEW

Drawn By	GAC
Designer	GAC
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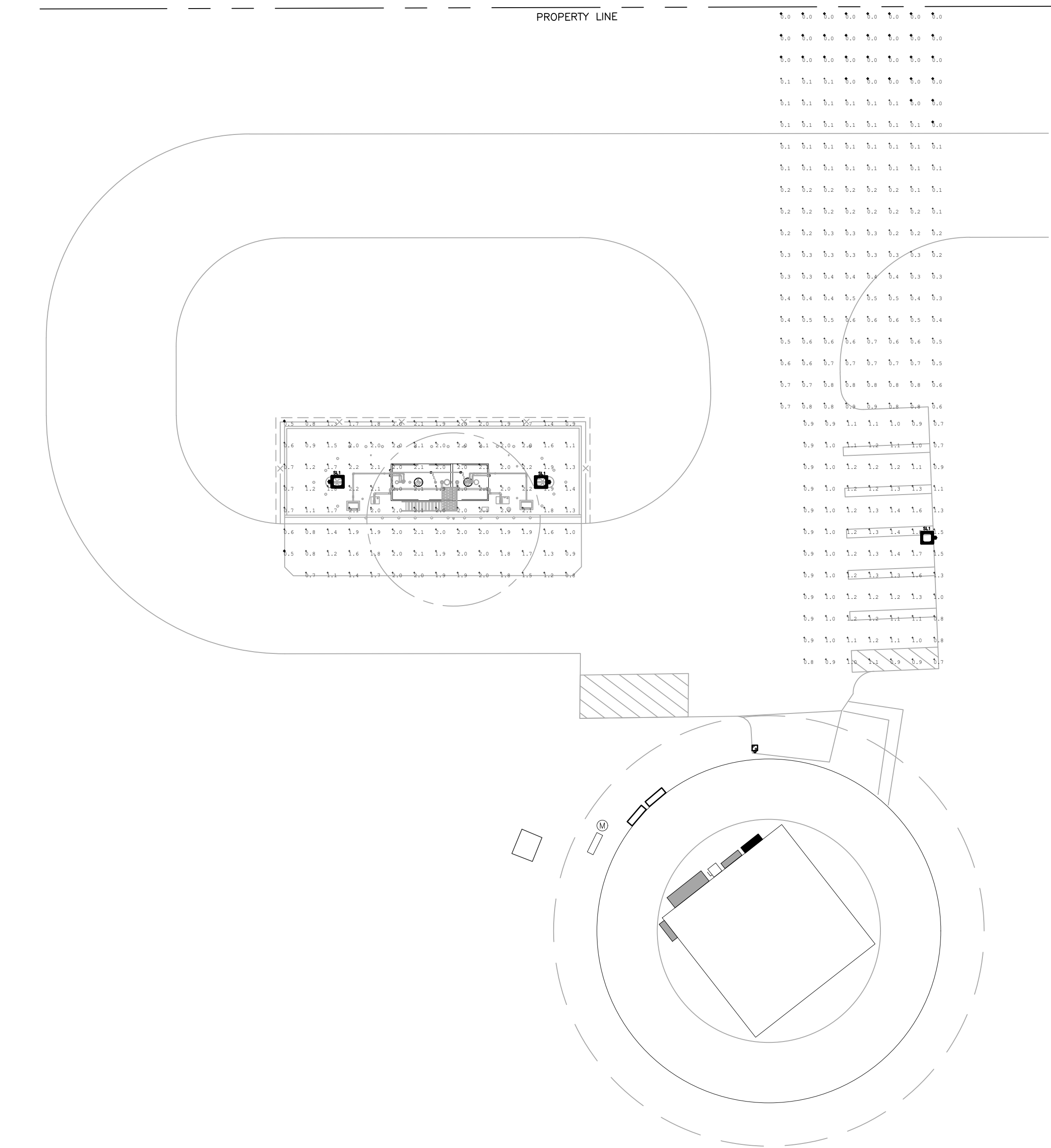
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PROJECT NO.  
**211407**

SHEET NO.

**E101**

PLOT INFO: Z:\2021\211407\CADD\DE\101P\211407.DWG LAYOUT: E101P DATE: 4/25/2023 TIME: 10:08:40 AM USER: GCAUHOUN



## ELECTRICAL SITE PLAN - PHOTOMETRICS

SCALE: 1" = 20'

Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts
	3	DSX1_LED_P2_40K_T3M_MVOLT	Single	DSX1 LED P2 40K T3M MVOLT	SL1	0.850	8640	70

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Property Line_1	Illuminance	Fc	0.28	0.9	0.0	N.A.	N.A.
Site Plan	Illuminance	Fc	1.43	2.2	0.5	2.86	4.40

## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

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Manager	PK2

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211407

SHEET NO.

# E101P

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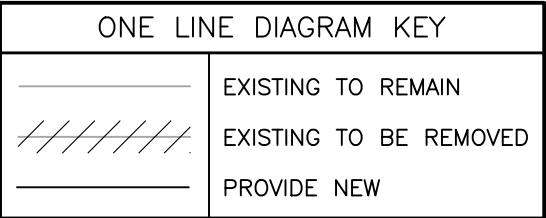
## NOTES

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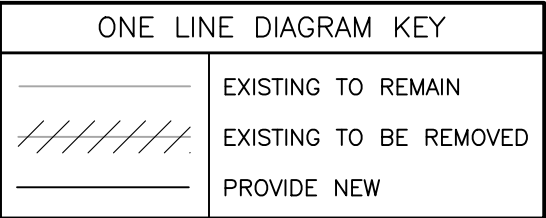
1. SEE GENERAL NOTES ON SHEET E001, FOR ADDITIONAL REQUIREMENTS.
2. SEE CIVIL DRAWINGS FOR ADDITIONAL UTILITY INFORMATION. COORDINATE ALL WORK WITH SITE TRADES.

- KEY NOTES**

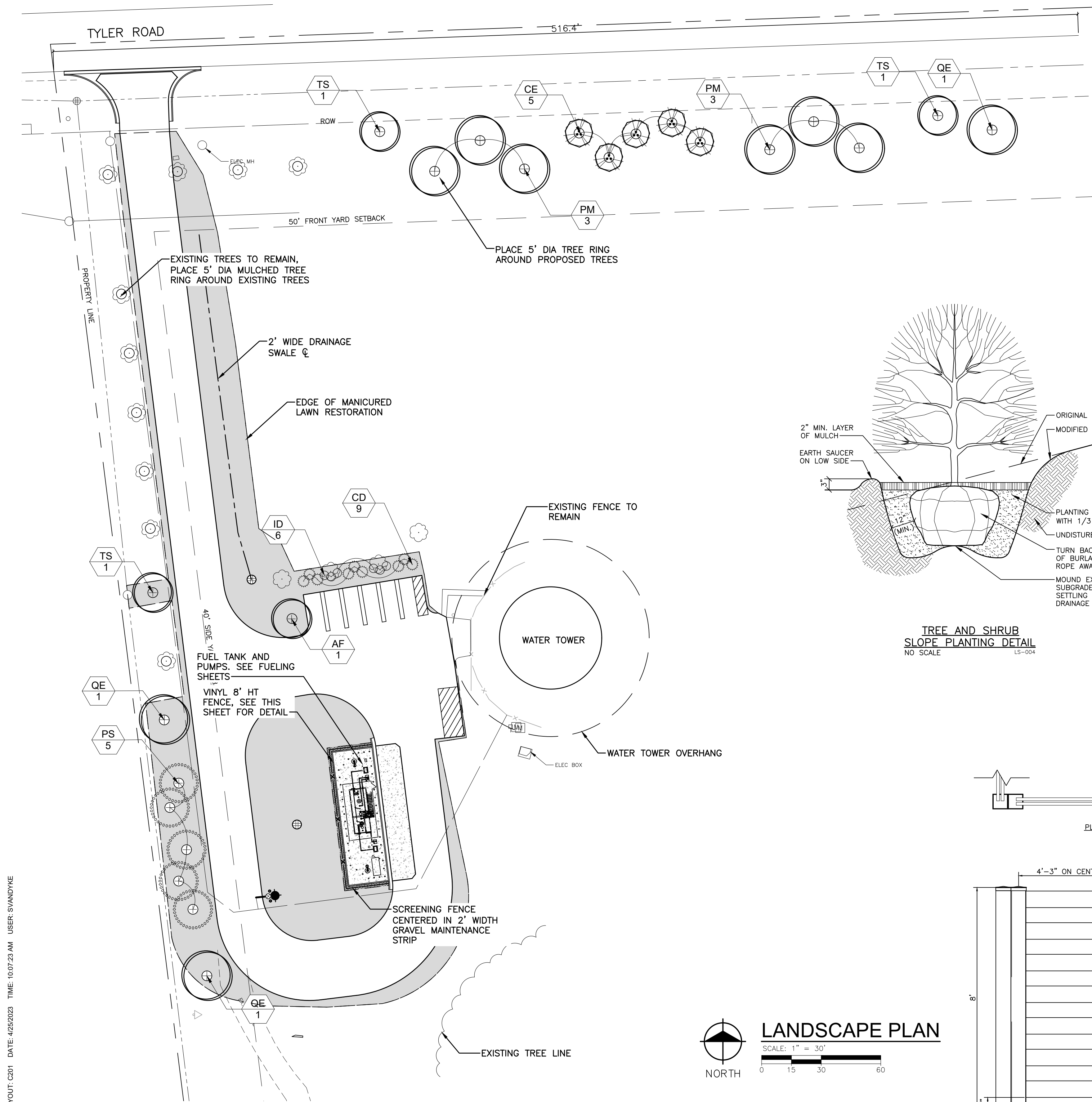
  1. PROVIDE 3#6, #10G, 1" C.
  2. INSTALL NEW CIRCUIT BREAKER TO MATCH EXISTING.



TYPICAL BRANCH CIRCUIT TRENCH DETAIL  
NO SCALE







#### PLANT SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL	REMARKS
AF	1	ACER RUBRUM 'FRANKSRED' / RED SUNSET® MAPLE	B & B	3" CAL	
PS	5	PINUS STROBUS / WHITE PINE	B & B	3" CAL	
PM	6	PLATANUS X ACERIFOLIA 'MORTON CIRCLE' / EXCLAMATION!™ LONDON PLANE TREE	B & B	3" CAL	
QE	3	QUERCUS ELLIPSOIDALIS / NORTHERN PIN OAK	B & B	3" CAL	
TS	3	TILIA TOMENTOSA 'STERLING' / STERLING SILVER LINDEN	B & B	3" CAL	
ORNAMENTAL TREES	QTY	BOTANICAL / COMMON NAME	CONT	CAL	REMARKS
CE	5	CERCIS CANADENSIS / EASTERN REDBUD MULTI-TRUNK	B & B	2" CAL	MATCHED. 3 OR 5 STEM CLUMP
SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	FIELD2	REMARKS
CD	9	CHAMAECYPARIS PISIFERA 'DOW WHITING' / SOFT SERVE® SAWARA CYPRESS	5 GAL		
ID	6	ILEX X MESERVEAE 'BLUE PRINCE' & 'BLUE PRINCESS' / BLUE PRINCE AND PRINCESS HOLLY	5 GAL		1 MALE, 5 FEMALE SHRUBS

#### ZONING CALCULATIONS

**FRONTAGE LANDSCAPING:** 1 TREE PER 40' LF OF FRONTAGE  
1 ORN. TREE PER 100' LF  
8 SHRUBS PER 40' LF

\* LANDSCAPING ONLY REQUIRED FOR WEST HALF OF DEVELOPED PROPERTY FRONTAGE = 516' LF

**REQUIRED:** 12.9 TREES + 5.16 ORN. TREES + 103.2 SHRUBS  
**PROPOSED:** 4 EXISTING TREES + 9 TREES + 5 ORN. TREES  
\* SHRUBS REQUIREMENT WAIVED BY VARIANCE

**GREEN BELT BUFFER:** BUFFER TYPE A= 10' WIDE AND 1 TREE PER 30' \* 451' LF OF DEVELOPED FRONTAGE

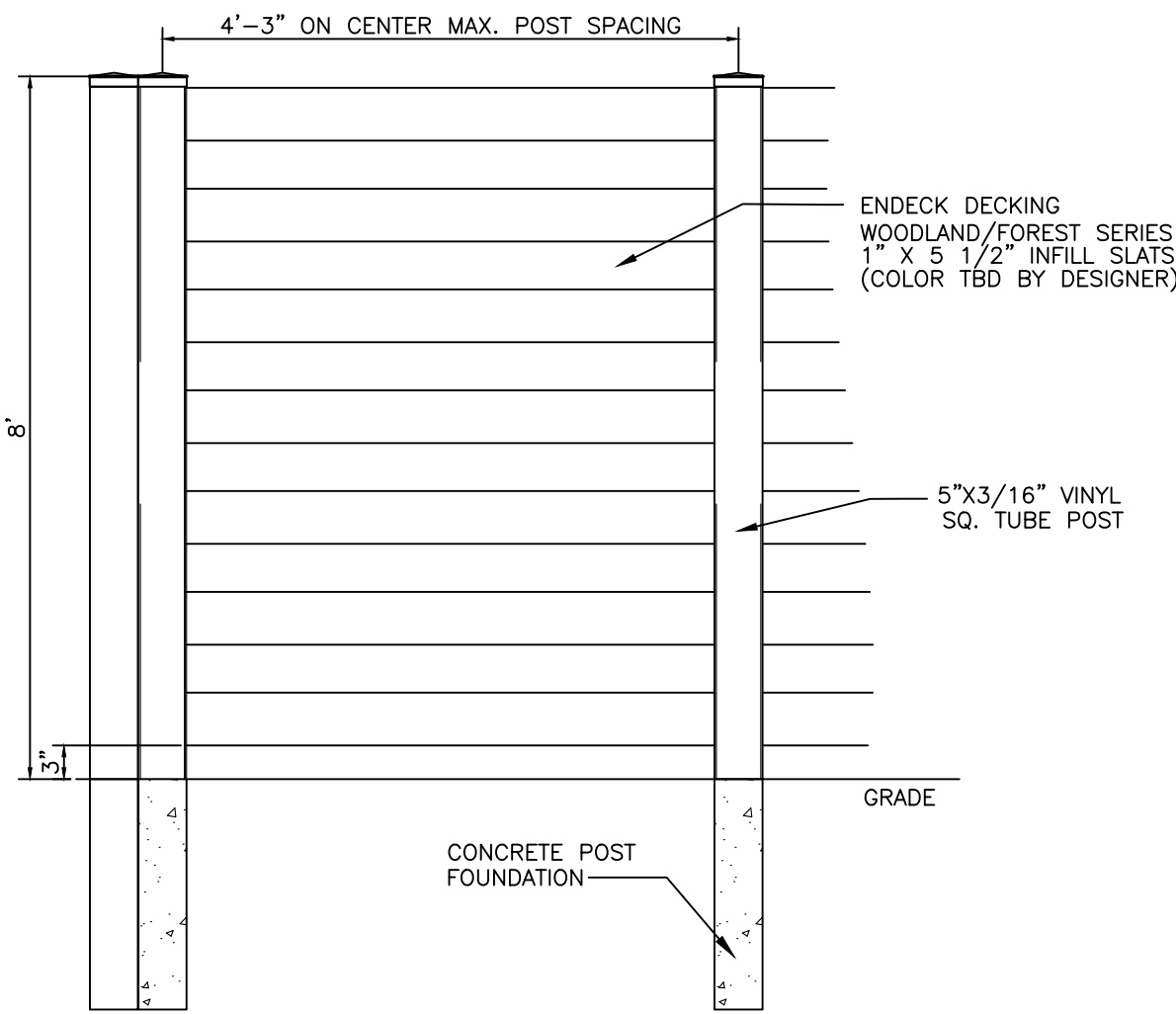
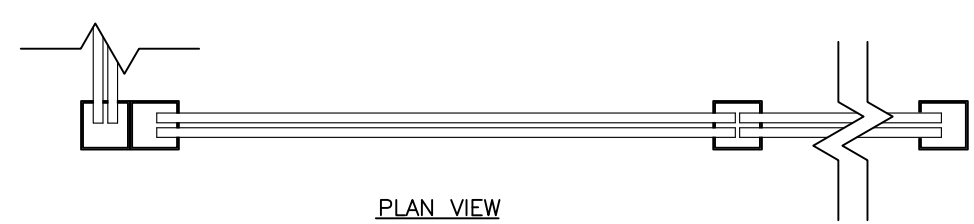
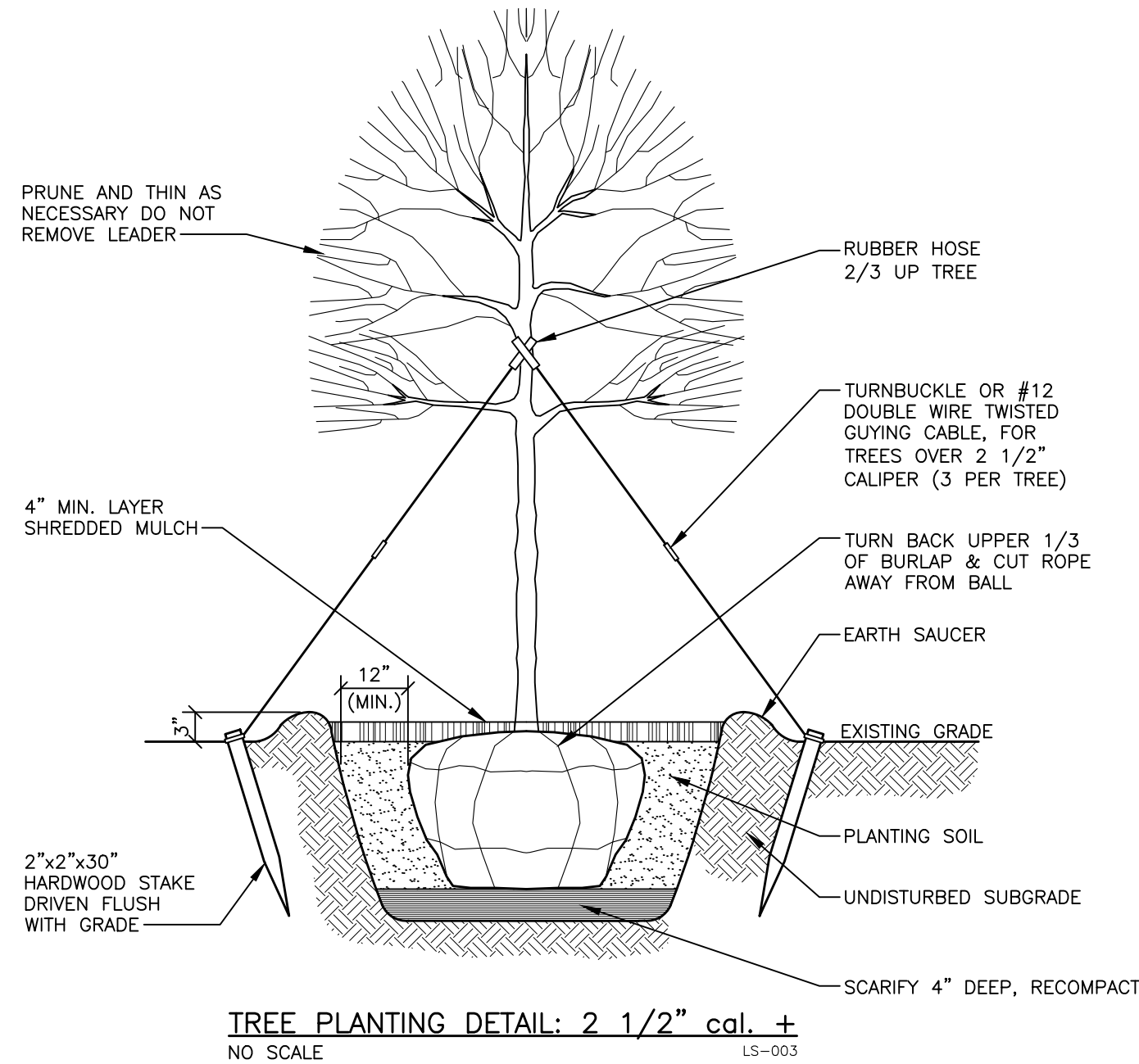
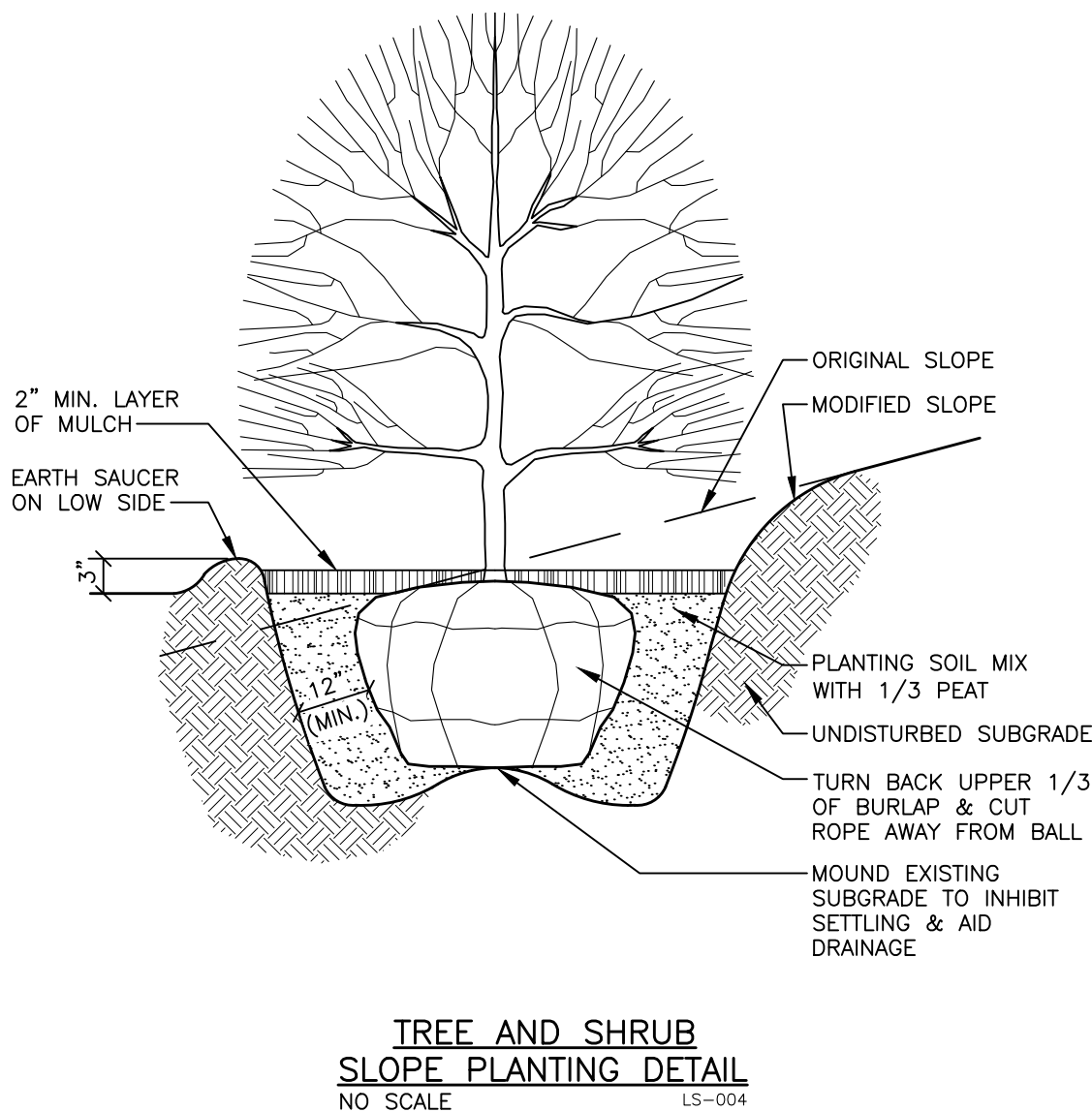
**REQUIRED:** 15.03 TREES  
**PROPOSED:** 7 EXISTING TREES + 8 PROPOSED TREES

**PARKING LOT SCREENING:** LANDSCAPE HEDGE OR VISUAL SCREEN FROM ROAD

**INTERIOR PARKING LOT LANDSCAPING:**  
5% OF OF ALL PAVED PARKING LOT AREA TO BE GREEN SPACE  
1 TREE PER 360 FT² OF PARKING LOT GREEN SPACE

**REQUIRED:** 324 FT² LANDSCAPE AREA + 1 TREE  
**PROPOSED:** 583 FT² LANDSCAPE AREA + 1 TREE

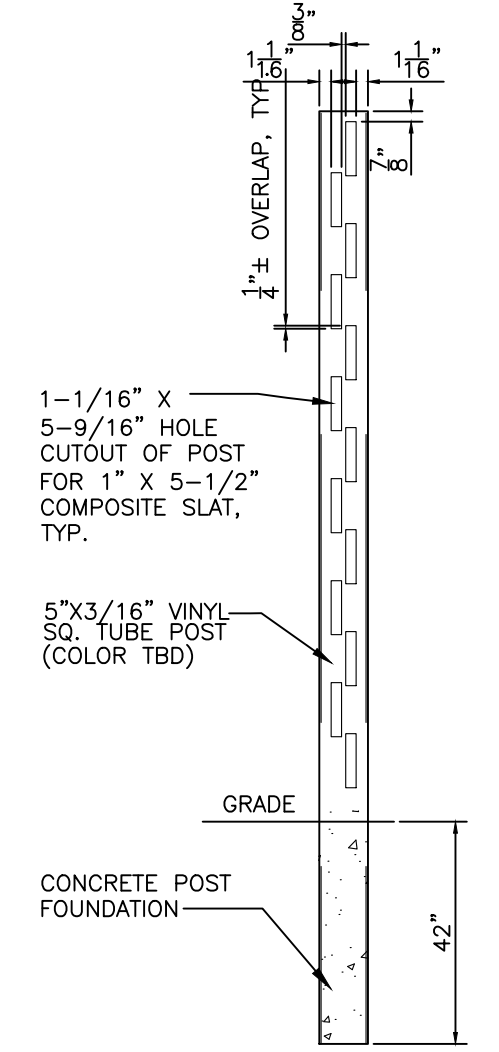
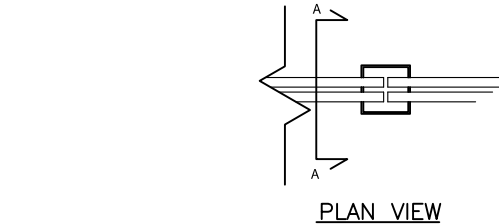
\* CALCULATION: 6478.6 FT² PARKING LOT AREA \* .05 = 323.9 FT² / 360 FT² \* 1 TREE



MERCURY STAGGERED COMPOSITE INFILL - VINYL POST TYPICAL PANEL COLOR TO BE DETERMINED

PHONE: 531-329-4406

**PalmSHIELD**

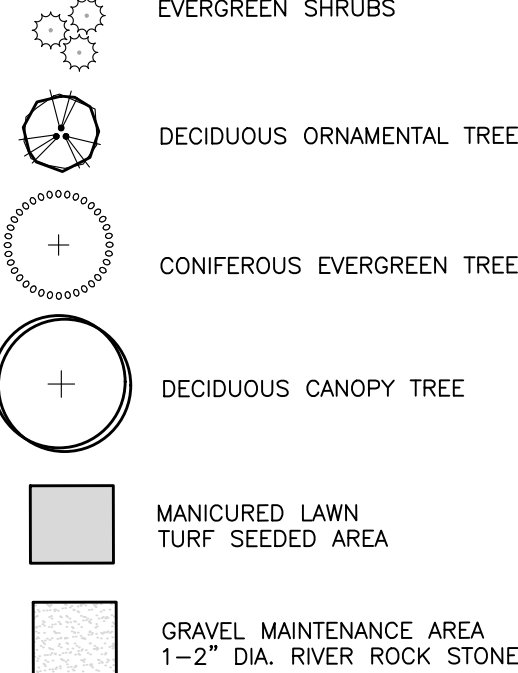


MERCURY STAGGERED COMPOSITE INFILL - VINYL POST TYPICAL PANEL COLOR TO BE DETERMINED

PHONE: 531-329-4406

**PalmSHIELD**

#### SYMBOL LEGEND



#### NOTES

- REPORT ANY DISCREPANCIES BETWEEN THE PLANS AND THE ACTUAL CONDITIONS TO THE CONSTRUCTION MANAGER FOR RESOLUTION.
- FURNISH AND INSTALL 8" OF FURNISHED MODIFIED TOPSOIL FOR ALL PLANT BEDS, UNLESS OTHERWISE NOTED ON THE DETAILS, WITH A PH 7.0 THAT CONTAINS ALL THE MICROORGANISMS NECESSARY FOR HEALTHY PLANT GROWTH. THE CONTRACTOR SHALL PROVIDE SOIL SAMPLE AND SUPPLIER TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO DELIVERY.
- FURNISH AND INSTALL 4" OF FURNISHED MODIFIED TOPSOIL FOR ALL TURF SEED OR SODDED AREAS FOR FINE GRADING, UNLESS OTHERWISE NOTED.
- EXTRA CARE SHOULD BE TAKEN TO PREVENT TURF SEED OR NATURAL AREA SEED FROM GETTING INTO PLANT BEDS AND ADJACENT NATURAL AREAS.
- FURNISH AND INSTALL 2-3" OF SHREDDED HARDWOOD MULCH TO ALL PLANT BEDS AND TREE INSTALLATIONS.
- LANDSCAPE CONTRACTOR SHALL COORDINATE ALL IRRIGATION INSTALLATION.
- ALL TREES SHOULD HAVE A STRONG CENTRAL LEADER UNLESS NOTED OTHERWISE.
- ALL NURSERY STOCK SHALL BE FIRST CLASS QUALITY AND IN EXCELLENT HEALTH, THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT ALL MATERIALS THAT DO NOT MEET THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.
- ALL NURSERY STOCK MATERIAL SHALL MEET ALL REQUIREMENTS OF THE SPECIFICATIONS.
- MAINTAIN 5' CLEARANCE FOR ALL TREES FROM MAJOR WATER, ELECTRIC, GAS, AND SEWER LINES. REPORT DISCREPANCIES WITH THE CONSTRUCTION MANAGER.
- ANY LANDSCAPE MATERIAL THAT FAILS WITHIN ONE YEAR FROM THE BUILDING OPENING SHALL BE REMOVED AND REPLACED.

#### KEY NOTES

- ALUMINUM LANDSCAPE EDGING

#### LAWN AREA- SEED MIX

COMMON NAME	PROPT BY WT	PURITY %	GERMINATION
KENTUCKY BLUEGRASS	20%	95%	85%
IMPROVED TURF-TYPE	70%	95%	85%
TALL FESQUE			
PERENNIAL RYEGRASS	10%	95%	85%

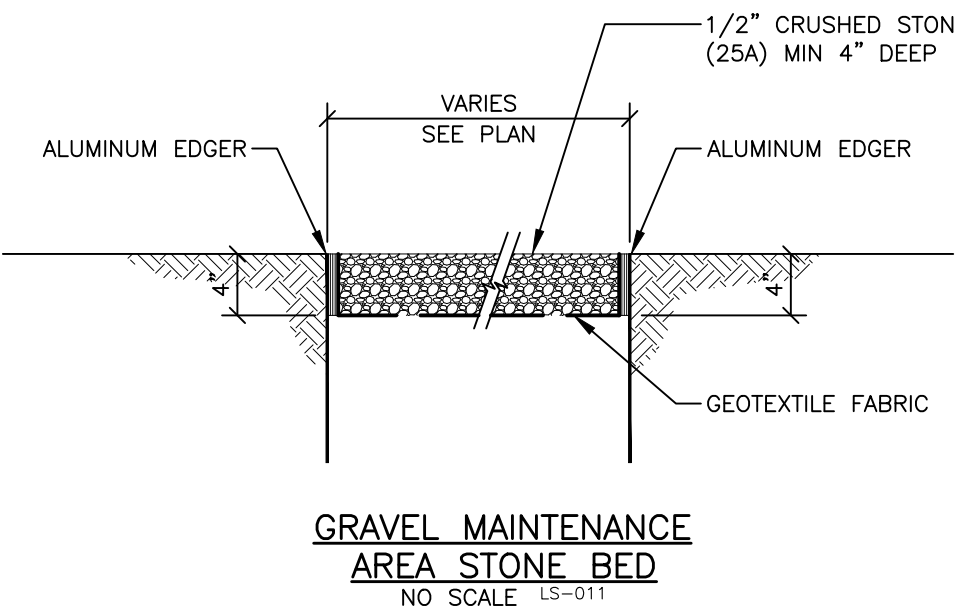
#### ZONING

ZONING DISTRICT: M-1 LIGHT INDUSTRIAL

SETBACKS:	FRONT YARD	50 FT
	SIDE YARD (ONE)	40 FT
	SIDE YARD (TOTAL OF 2)	80 FT
	REAR YARD	40 FT

#### MAINTENANCE NOTES

- OWNER AGREES TO SEASONAL MAINTENANCE PROGRAM AND WILL REPLACE ALL DISEASED, DEAD, OR DAMAGED PLANTS AFTER THE AGREED UPON WARRANTY PERIOD. THE OWNER AGREES TO REPLENISH MULCH, CONTROL WEEDS, FERTILIZE, AND PRUNE UPON COMPLETION OF CONSTRUCTION AND AFTER THE AGREED UPON WARRANTY PERIOD.



## Charter Township of Van Buren

Wayne County, Michigan

Water Tower Fuel Tank Relocation

#### REVISIONS

4/24/2023	BIDS
4/6/2023	PERMITS
3/29/2023	OWNER REVIEW
1/6/2023	OWNER REVIEW

Drawn By SRV  
Designer  
Reviewer MV  
Manager PK2

Hard copy is intended to be 24"x36" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.  
211407

SHEET NO.

# L101



# CONTACT INFORMATION

CONSTRUCTION MANAGER

FUEL SYSTEM DESIGNER

DIAMOND Z ENGINEERING, INC.

5670 STATE ROAD  
CLEVELAND, OH 44134  
P: 440.842.6501

# GENERAL NOTES

1.

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND RULES. FUEL SYSTEM CONTRACTOR SHALL ENSURE A SAFE WORK ENVIRONMENT EXISTS AT ALL TIMES.
2.

FUEL SYSTEM CONTRACTOR SHALL OBSERVE ANY OVERHEAD OBSTRUCTIONS THAT MAY BE IMPACTED AS PART OF THE WORK.
3.

FUEL SYSTEM CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL UNDERGROUND UTILITIES ARE LOCATED AND MARKED. ANY DAMAGE TO UTILITIES AS PART OF THE WORK SHALL BE BORNE BY THE FUEL SYSTEM CONTRACTOR.
4.

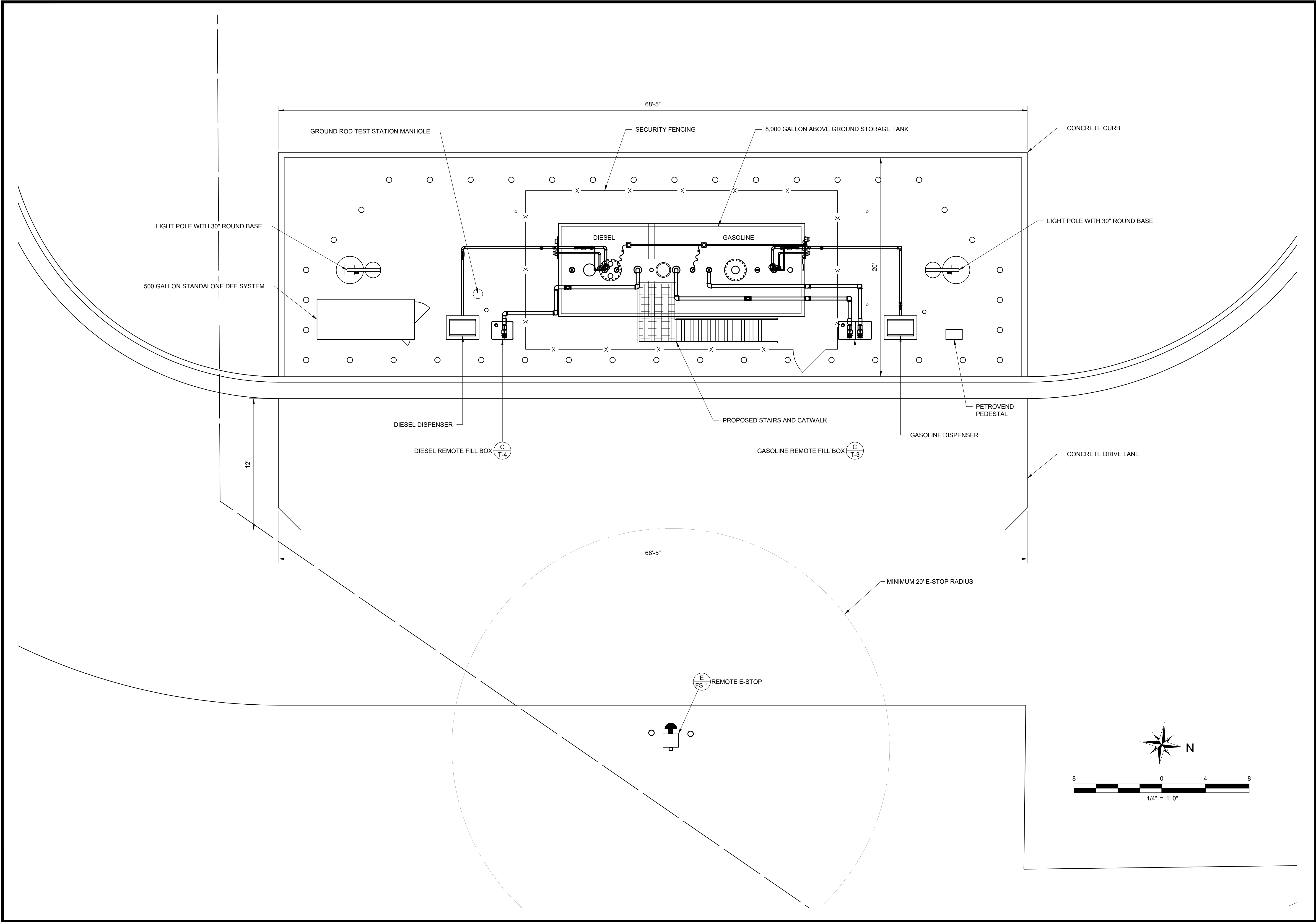
FUEL SYSTEM CONTRACTOR SHALL TAKE DELIVERY OF AND UNLOAD ALL EQUIPMENT UPON ARRIVAL AS NEEDED. FUEL SYSTEM CONTRACTOR IS OTHERWISE RESPONSIBLE FOR ALL EQUIPMENT UNTIL SITE ACCEPTANCE AND TURN-OVER TO VAN BUREN TOWNSHIP.
5.

HAZARDOUS AREAS ARE DEFINED PURSUANT TO THE NATIONAL ELECTRIC CODE. THESE MUST BE OBSERVED WHEN INSTALLING SPARK GENERATING EQUIPMENT.
6.

FUEL SYSTEM CONTRACTOR SHALL SCHEDULE AND COORDINATE CRITICAL PHASE FIELD INSPECTIONS WITH THE FUEL SYSTEM DESIGNER. THE FUEL SYSTEM CONTRACTOR WILL PROVIDE AT LEAST 48 HOURS NOTICE BEFORE EACH INSPECTION. ANY ADDITIONAL COSTS ASSOCIATED WITH EXTENDED STAYS OR RETURN INSPECTIONS SHALL BE CHARGED BACK TO THE FUEL SYSTEM CONTRACTOR. CRITICAL PATH INSPECTIONS INCLUDE:

A.

FINAL INSPECTION, TESTING, AND COMMISSIONING.
- ## NOTE:
- ANY DEVIATION FROM THE SPECIFIED  
EQUIPMENT & MATERIALS MUST BE APPROVED  
PRIOR TO INSTALLATION BY THE DESIGNATED  
CONSTRUCTION MANAGER.
- # LEGEND
- 
- EQUIPMENT IDENTIFIER
- 
- DETAIL IDENTIFIER
- FSC
- FUEL SYSTEM CONTRACTOR
- 
- LIGHT POLE
- 
- UNDISTURBED SOIL
- 
- PEA GRAVEL
- 
- CONCRETE
- 
- CATCH BASIN
- 
- MANHOLE
- # VAN BUREN TOWNSHIP AST PROJECT
- 46425 TYLER ROAD  
VAN BUREN, MI 48111
- ## DRAWING INDEX
- | DRAWING INDEX             |   | REVISION |           |
|---------------------------|---|----------|-----------|
| COVER                     |   | NUMBER   | DATE      |
| CS-0                      | COVER SHEET                             | 3        | 4/24/2023 |
| FUEL PIPING PLANS         |   |          |           |
| F-1                       | SITE PLAN                               | 1        | 1/20/2023 |
| MATERIALS                 |   |          |           |
| M-1                       | MATERIALS LIST                          | 2        | 4/6/2023  |
| TANK INSTALLATION DETAILS |   |          |           |
| T-1                       | TANK INSTALLATION DETAILS               | 2        | 4/6/2023  |
| T-2                       | TANK LAYOUT                             | 1        | 1/20/2023 |
| T-3                       | GASOLINE TANK EQUIPMENT DETAILS         | 1        | 1/20/2023 |
| T-4                       | DIESEL TANK EQUIPMENT DETAILS           | 1        | 1/20/2023 |
| T-5                       | DEF TANK DETAILS                        | 1        | 1/20/2023 |
| DISPENSER DETAILS         |   |          |           |
| D-1                       | DIESEL DISPENSER DETAILS                | 2        | 4/6/2023  |
| D-2                       | GASOLINE DISPENSER DETAILS              | 2        | 4/6/2023  |
| MISCELLANEOUS DETAILS     |   |          |           |
| FS-1                      | CONCRETE AND MISCELLANEOUS SITE DETAILS | 1        | 1/20/2023 |
| FS-2                      | SIGNAGE DETAILS                         | 1        | 1/20/2023 |
| FS-3                      | SECURITY FENCE DETAILS                  | 3        | 4/24/2023 |
| FS-4                      | CONCRETE DETAILS                        | 1        | 1/20/2023 |
| ELECTRICAL DETAILS        |   |          |           |
| FE-1                      | CONDUIT AND HAZARDOUS AREA LAYOUT       | 2        | 4/6/2023  |
| FE-2                      | AST ELECTRICAL DETAILS                  | 1        | 1/20/2023 |
- # LOCATION MAP
- 
- # ONE CALL
- 
- 48 HOURS BEFORE YOU DIG,  
CALL 1.800.482.7171 OR 811
- ## REVISIONS
- | GLZ                | ERK                        | GLZ                        |   |   |   |
|--------------------|----------------------------|----------------------------|---|---|---|
| 1/20/2023          | 4/6/2023                   | 4/24/2023                  |   |   |   |
| BID AND PERMIT SET | REVISED BID AND PERMIT SET | REVISED BID AND PERMIT SET |   |   |   |
| △                  | △                          | △                          | △ | △ | △ |
- ## VAN BUREN TOWNSHIP
- 46425 TYLER ROAD  
VAN BUREN, MI 48111
- 
- COVER SHEET
- DIAMOND Z ENGINEERING, INC.  
5670 STATE ROAD  
CLEVELAND, OH 44134  
PHONE: 440-842-6501
- ALL RIGHTS RESERVED. THIS DRAWING IS THE PROPERTY OF DIAMOND Z ENGINEERING, INC. & IS LOANED WITH THAT UNDERSTANDING & SHALL NOT BE COPIED, REPRODUCED OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY WITHOUT PRIOR PERMISSION.
- SCALE:
- NONE
- DATE:
- 1/20/2023
- DRAWN BY:
- GLZ
- PROJECT NO.:
- MI-4008
- DRAWING NO.
- CS-0



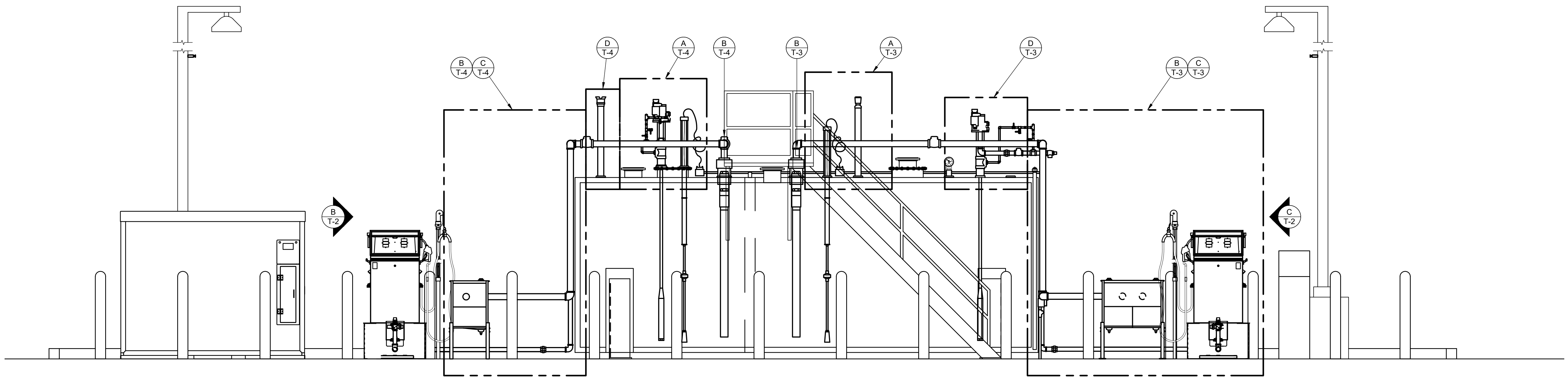
REVISIONS					
1/20/2023	GLZ				
BID AND PERMIT SET					
VAN BUREN TOWNSHIP 46425 TYLER ROAD VAN BUREN, MI 48111					
<b>DIAMOND Z</b> ENGINEERING, INC.					SITE PLAN
DIAMOND Z ENGINEERING, INC. 5670 STATE ROAD CLEVELAND, OH 44134 PHONE: 440-842-6501					
ALL RIGHTS RESERVED. THIS DRAWING IS THE PROPERTY OF DIAMOND Z ENGINEERING, INC. & IS LOANED WITH THAT UNDERSTANDING & SHALL NOT BE COPIED, REPRODUCED OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY WITHOUT PRIOR PERMISSION.					
SCALE: 1/4" = 1'-0"		DATE: 1/20/2023			
DRAWN BY: GLZ		PROJECT NO.: MI-4008			
DRAWING NO. F-1					



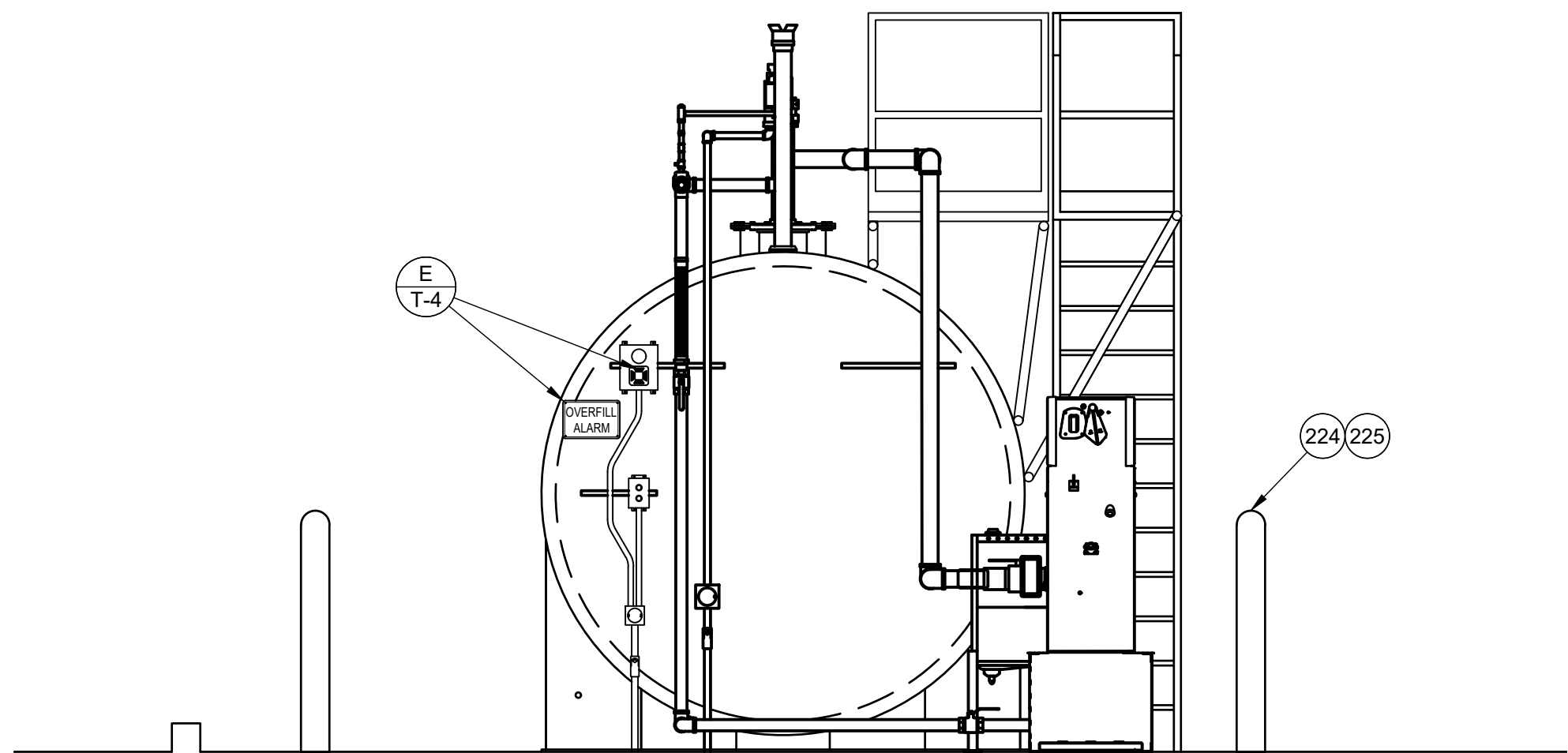
TANK AND TANK TOP EQUIPMENT							DISPENSING EQUIPMENT							ELECTRICAL													
ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY	ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY	ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY							
1	8,000 GALLON FIRE GUARD TANK 96" DIAMETER W/ WHITE URETHANE. 5,000 GALLON BASE TANK (REGULAR GASOLINE) AND 3,000 GALLON END TANK (DIESEL)	STANWADE	75-8000FGC-96	1	FSC	FSC	60	REMOTE DISPENSER, 1-PRODUCT, 1-HOSE; LOW HOSE; 2-SIDED; SIDE LOAD. INCLUDES: (1) P 4-CHANNEL PULSE OUTPUT, (1) LOWER J-BOX, (1) SO INTERNAL SPIN ON FILTER, (1) SD STAINLESS STEEL LOWER DOORS	BENNETT	3711SNR-17-P-J-SO-SD	1	FSC	FSC	2	151	2-INCH INTERSTITIAL SENSOR RISER CAP AND ADAPTER KIT	VEEDER ROOT	312020-928	1	FSC	FSC						
2	OSHA STAIRS & FULL CATWALK PAINTED SAFETY YELLOW. (STAIRS INSTALLED ON THE SIDE)	STANWADE	75-8000FGC-96	INCL	FSC	FSC		WAYNE	3/G7201D/2GJK-H/S/2	3/G7201D/2GJK-H/S/2				152	NON-DISCRIMINATING INTERSTITIAL MICROSENSOR FOR STEEL TANKS	VEEDER ROOT	794380-344	1	FSC	FSC							
3	UNISTRUT-BOTH ENDS OF TANK	STANWADE	75-8000FGC-96	INCL	FSC	FSC								179	FACTORY INSTALLED BIR / ACCU-CHART SOFTWARE	VEEDER ROOT	333149-001	1	FSC	FSC							
4	10" FLANGE E.V. W/ O-RING	MORRISON	244OF-0400 AV	INCL	FSC	FSC								180	TLS-450 PLUS WITH INTEGRAL PRINTER AND DISPLAY, INCLUDES 3.0-GPH LINE TEST CABILITY, 3 ETHERNET PORTS, 2 USB PORTS, AND 1 HIGH VOLTAGE OUTPUT	VEEDER ROOT	860091-301	1	FSC	FSC							
5	6" FLANGE E.V. W/ O-RING	MORRISON	244OF-0050 AV	INCL	FSC	FSC								181	TLS-450 PLUS APPLICATION SOFTWARE	VEEDER ROOT	333545-001	1	FSC	FSC							
6	2- 3" 15 GALLON AST REMOTE SPILL CONTAINER DUAL PORTS - FEMALE THREADED	MORRISON	515-2300 AC	INCL	FSC	FSC								182	TANK GAUGE MAG PLUS PROBE - 8'-0" (GASOLINE AND DIESEL)	VEEDER ROOT	846396-107	2	FSC	FSC							
7	8" FLANGE E.V. W/ O-RING	MORRISON	244OF-0600 AV	INCL	FSC	FSC	61				GASBOY 9800K COMMERCIAL ELECTRONIC SERIES DISPENSER, ONE HOSE, SIDE LOAD WITH INTERNAL FILTER ADAPTER, STANDARD INTERNAL 30 MICRON FILTER (PART # R18189-30) PULSE OUTPUT, ELECTRIC TOTALIZER AND STAINLESS STEEL DOORS (FRONT & BACK) (DIESEL)	GASBOY ATLAS	9852KX-D-F-SSA	184	TANK PROBE ADAPTER AND CAP - NICKEL PLATED	OPW	62M-MA	2	FSC	FSC							
8	3" 15 GALLON AST REMOTE SPILL CONTAINER - FEMALE THREAD	MORRISON	515-0300 AC	INCL	FSC	FSC		185	MAG PLUS FLOAT KIT, 4" WITH 10' CABLE (DIESEL)	VEEDER ROOT				846400-011	1	FSC	FSC										
9	6" X 4" HEX HEAD REDUCER BUSHING	MORRISON	184--2900 1B	INCL	FSC	FSC		186	MAG PLUS PROBE ETHANOL BLENDED GASOLINE FLOAT KIT WITH PHASE SEPARATION DETECTION, 4" WITH 10' CABLE	VEEDER ROOT				886100-010	1	FSC	FSC										
10	3" X 6" OVERFILL VALVE, FEMALE NPT	MORRISON	9095A-3300AV	INCL	FSC	FSC		187	UNIVERSAL SENSOR/PROBE INTERFACE MODULE	VEEDER ROOT				332812-001	1	FSC	FSC										
11	3" X 10' DROP TUBE	MORRISON	419-0200 1T	INCL	FSC	FSC		188	UNIVERSAL INPUT/OUTPUT INTERFACE MODULE	VEEDER ROOT				332813-001	1	FSC	FSC										
12	3" SWING CHECK VALVE THR. DUCT IRON	MORRISON	246ADI-0600AV	INCL	FSC	FSC		62	DISPENSER PEDESTAL	OPW				PPT-2136	2	FSC	FSC	189	RISK MANAGEMENT SOFTWARE FOR 2-GPH LINE TEST ON-DEMAND, MONTHLY OR REPETITIVE AND 1-GPH LINE TEST ON-DEMAND OR AUTO	VEEDER ROOT	332972-009	1	FSC	FSC			
13	3" BALL VALVE, DUCTILE IRON	---	---	INCL	FSC	FSC	63	DISPENSER PEDESTAL TOP (FOR BENNETT)	OPW	PPT-1120	2	FSC	FSC	190	EXPLOSION PROOF JUNCTION BOX	---	---	AS REQ'D	FSC	FSC							
14	3" PART F - MALE X MALE, THREADED-ALUMINUM	MORRISON	800F-A0600 IC	INCL	FSC	FSC	64	DISPENSER PEDESTAL TOP (FOR WAYNE)		PPT-1630					191	EXPLOSION PROOF CAP ELBOW	---	---	AS REQ'D	FSC	FSC						
15	3" LOCKING DUST CAP	MORRISON	800DCA0600 IC	INCL	FSC	FSC	65	STABILIZER BAR KIT	OPW	SBK-1100J	2	FSC	FSC	192	SEAL OFF	---	---	AS REQ'D	FSC	FSC							
17	3" VAPOR RECOVERY CAP - CARB EVR APPROVED	MORRISON	323C-0100ACEVR	INCL	FSC	FSC	66	1-1/2" PRODUCT SHEAR VALVE, SINGLE POPPET, FEMALE TOP	FRANKLIN FUELING	662-501-902	2	FSC	FSC	193	3/4" DIAMETER X 10' LONG COPPER BONDED GROUND ROD	---	---	4	FSC	FSC							
18	3" 150# BLACK UNION	STANWADE	66-300	INCL	FSC	FSC	67	14' LONG, 3/4" HOSE, MALE X MALE, FOR GASOLINE AND DIESEL	OPW	10P-0150				194	#4 AWG BARE COPPER GROUND WIRE	---	---	AS REQ'D	FSC	FSC							
19	3" 90D BLACK ELBOW	STANWADE	50-300	INCL	FSC	FSC	68	3/4" SWIVEL FOR GASOLINE AND DIESEL	GOODYEAR / CONTINENTAL	GY20021913	2	FSC	FSC	195	GROUND ROD THERMAL CADWELD FOR UNDERGROUND USE	---	---	6	FSC	FSC							
20	3" X 3" BLACK NIPPLE	STANWADE	58-300X0300	INCL	FSC	FSC	69	3/4" LONG, 3/4" WHIP HOSE, MALE X MALE (GASOLINE AND DIESEL)	HUSKY	350	2	FSC	FSC	196	#2 AWG BARE COPPER GROUND WIRE	---	---	AS REQ'D	FSC	FSC							
21	3" X 4" BLACK NIPPLE	STANWADE	58-300X0400	INCL	FSC	FSC	70	3/4" MAGNETIC RECONNECTABLE BREAKAWAY WITH BLACK SCUFF HOUSING (GASOLINE AND DIESEL)	GOODYEAR / CONTINENTAL	20021965	2	FSC	FSC	197	FUEL CONTROL 3-PHASE PANEL WITH ASSOCIATED RELAYS AND BREAKERS, 120/208 VAC	FRANKLIN FUELING	CPS-0222X5ABMB	---	FSC	FSC							
22	3" BLACK PIPE	STANWADE	10-300	INCL	FSC	FSC	71	NOZZLE, 10S (UNLEADED)	HUSKY	8330	2	FSC	FSC	198	EMERGENCY STOP WITH ALARMING COVER (EXTERIOR)	FRANKLIN FUELING	IA-ESOCA	1	FSC	FSC							
23	2" CLOCK GAUGE W/ STAND FLOAT, MALE THREADS	MORRISON	918-0000 AG	INCL	FSC	FSC	72	NOZZLE, XS 3/4" STANDARD LIGHT DUTY DIESEL	HUSKY	159579-04	1	FSC	FSC	2	PETRO VEND PV-ENT-DX - INCLUDES ONE PV200 ISLAND TERMINAL WITH PEDESTAL (PART # 20-4359-40), MOUNTING BRACKET (PART # 20-4428) NUMERIC KEY PAD (PART # 20-4444-YES), PROXIMITY READER, MAG STRIPE READER, AND INTERNAL FUEL SITE CONTROLLER (FSC3000) FOR ELECTRONIC DISPENSER CONTROL	OPW	PV-ENT-DX	1	FSC	FSC							
26	4" X 2" BLACK HEX BUSHING	STANWADE	41-400X200	INCL	FSC	FSC	73	HOSE RETRIEVER ASSEMBLY, WITH WEIGHT KIT	MORRISON	159597-03	1	FSC	FSC								200	PETROVEND FUEL SITE CONTROLLER SOFTWARE	OPW	SF-DFS	1	FSC	FSC
27	3" VENT UPDRAFT	MORRISON	354-0300 AV	1	FSC	FSC	74	NOZZLE READER ASSEMBLY FOR GASOLINE NOZZLE	OPW	610BUN0125 1B	2	FSC	FSC								201	PUMP CONTROL MODULE (MASTER - 2 HOSE) AND PUMP CONTROL MODULE (CLIENT - 2 HOSE)	OPW	20-4404-09 AND 20-4405	1	FSC	FSC
28	4" BLACK PLUG	STANWADE	---	INCL	FSC	FSC	75	NOZZLE READER ASSEMBLY FOR DIESEL NOZZLE	OPW	20-4458	1	FSC	FSC								202	DX FLEET ANNUAL SOFTWARE SUBSCRIPTION (INTERNAL FSC CONFIGURATION)	OPW	65-0011	1	FSC	FSC
29	HI-WAY LOW SULFUR DIESEL DECAL KIT, #2-(RED), #0-(BLUE), #0-(YELLOW), (WHITE)-BLANK	STANWADE	99-DDLSD	INCL	FSC	FSC	76	NOZZLE READER ASSEMBLY FOR DIESEL NOZZLE	OPW	20-4459	1	FSC	FSC								203	VIS ASSEMBLY (INTERNAL TO PV200) WITH VIS ANTENNA - OMNI-DIRECTIONAL WHIP W/ MOUNTING BRACKET AND VIS ANTENNA - DIRECTIONAL PANEL MOUNT	OPW	20-4456	1	FSC	FSC
30	GASOLINE DECAL KIT, #3-(RED), #1-(BLUE), #0-(YELLOW), (WHITE)- BLANK	STANWADE	99-DG	INCL	OWNER	FSC	77	NOZZLE READER ASSEMBLY FOR DIESEL NOZZLE	OPW	20-4459	1	FSC	FSC	204	STAND-ALONE PROGRAMMING PACKAGE (INCLUDES TAG PROGRAMMER, TAGWRITER SOFTWARE, RFN TEST UNIT, AND PUSH BUTTON RFN)	OPW	20-4454	1	FSC	FSC							
SUBMERSIBLE PUMP & ACCESSORIES							PIPE FITTINGS							MISCELLANEOUS													
ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY	ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY	ITEM	DESCRIPTION	MAKE	MODEL	QTY	SUPPLIED BY	INSTALLED BY							
40	1.5 HP, FIXED SPEED, VARIABLE LENGTH, SINGLE-PHASE SUBMERSIBLE PUMP WITH 18-INCH RISER	FRANKLIN FUELING	STP-150-VL2-18	2	FSC	FSC	80	2" SCHEDULE 40 GALVANIZED PIPE	---	---	AS REQ'D	FSC	FSC	210	EMERGENCY STOP SIGNAGE	MAY ADVERTISING	M-53* (OR EQUAL)	1	FSC	FSC							
	1.5 HP, FIXED SPEED, VARIABLE LENGTH, SINGLE-PHASE, SUBMERSIBLE PUMP MODEL #P150U1-RJ1	RED JACKET	410141-001				81	2" SCHEDULE 40 GALVANIZED COUPLER	---	---	AS REQ'D	FSC	FSC	211	CLASSIC SERIES SURFACED MOUNTED FIRE EXTINGUISHER CABINET (24.25"x10.5"x6.5")	CSMC-10	---	2	FSC	FSC							
41	STP-CBS---SINGLE-PHASE CONTROL BOX WITH SWITCH AND LOCKOUT, 120V COIL	FRANKLIN FUELING	400818921	2	FSC	FSC	82	2" SCHEDULE 40 GALVANIZED UNION	---	---	AS REQ'D	FSC	FSC	212	10LBS ABC FIRE EXTINGUISHERS (SEE PRINT FOR PROPER QUANTITY)	---	---	2	FSC	FSC							
	SINGLE-PHASE STANDARD CONTROL BOX	RED JACKET	880-041-5				83	2" SCHEDULE 40 GALVANIZED 90-DEGREE ELBOW	---	---	AS REQ'D	FSC	FSC	213	SL1 SELF-LEVELING JOINT SEALANT-LIMESTONE COLOR (FOR FILLING ALL JOINTS)	---	---	AS REQ'D	FSC	FSC							
42	MECHANICAL LINE LEAK DETECTOR (DIESEL)	FRANKLIN FUELING	403170901	---	FSC	FSC	84	2" SCHEDULE 40 GALVANIZED TEE	---	---	AS REQ'D	FSC	FSC	214	SpecChem CURE & SEAL 25 CONCRETE SEALANT (FOR ALL CONCRETE FLATWORK)	---	---	AS REQ'D	FSC	FSC							
		RED JACKET	FX1DV				85	1 1/2" SCHEDULE 40 BLACK PIPE	---	---	AS REQ'D	FSC	FSC	215	OVERFILL ALARM 12" X 8" ALUMINUM SIGN WITH RED LETTERS	MAY ADVERTISING	M-58 (OR EQUAL)	1	FSC	FSC							
44	2-INCH ANTI-SIPHON VALVE 10-15 FEET W.C.	MORRISON	910-2200AV	2	FSC	FSC	96	1 1/2" SCHEDULE 40 BLACK COUPLER	---	---	AS REQ'D	FSC	FSC	216	DANGER-NO SMOKING 18" X 24" DECAL	---	---	2	FSC	FSC							
		OPW	199-ASV-3200				97	1 1/2" SCHEDULE 40 BLACK UNION, 250 LB	---	---	AS REQ'D	FSC	FSC	217	DANGER- DIESEL FUEL 18" X 24" DECAL	---	---	2	FSC	FSC							
45	2-INCH SWING CHECK VALVE	MORRISON	246A-0200AV	2	FSC	FSC	98	1 1/2" SCHEDULE 40 BLACK 90-DEGREE ELBOW	---	---	AS REQ'D	FSC	FSC	218	DANGER- GASOLINE 18" X 24 " DECAL	---	---	2	FSC	FSC							
		OPW	175B-1544				99	1 1/2" SCHEDULE 40 BLACK TEE	---	---	AS REQ'D	FSC	FSC	219	NO SMOKING-STOP ENGINE 10" X 16" ALUMINUM SIGN	MAY ADVERTISING	D-8 (OR EQUAL)	2	FSC	FSC							
46	1/2-INCH EXPANSION RELIEF VALVE (50-PSI)	MORRISON	076DI-0200AV	2	FSC	FSC	100	1 1/2" SCHEDULE 40 BLACK 45-DEGREE ELBOW	---	---	AS REQ'D	FSC	FSC	220	5,000 GALLONS--VOLUME DECAL	---	---	2	FSC	FSC							
47	2" STAINLESS STEEL FULL PORT BALL VALVE	JOMAR	T-SS-1001-N	4	FSC	FSC	101	2" SCHEDULE 40 BLACK PIPE	---	---	AS REQ'D	FSC	FSC	221	3,000 GALLONS--VOLUME DECAL	---	---	2	FSC	FSC							
49	1/2" FULL PORT BRASS BALL VALVE	OPW	21BV-0050	8	FSC	FSC	102	2" SCHEDULE 40 BLACK COUPLER	---	---	AS REQ'D	FSC	FSC	222	GASOLINE DECALS 3" X 12"	MAY ADVERTISING	D-12-18-R	4	FSC	FSC							
		JOMAR	100-703				103	2" SCHEDULE 40 BLACK 90 DEGREE ELBOW	---	---	AS REQ'D	FSC	FSC	223	DIESEL DECALS 3" X 12"	MAY ADVERTISING	D-12-72	4	FSC	FSC							
							104	2" SCHEDULE 40 BLACK TEE	---	---	AS REQ'D	FSC	FSC	224	6" ROUND X 84" TALL STRAIGHT CARBON STEEL PIPE BOLLARD	---	PC-PG6X84	43	FSC	FSC							
							105	2" X 4" SCHEDULE 40 BLACK DOUBLE TAP BUSHING	---	---	AS REQ'D	FSC	FSC	225	6" IDEAL SHIELD BOLLARD COVER---YELLOW	IDEAL SHIELD	IS-BPD-Y-6-52S	43	FSC	FSC							
							106	2" SCHEDULE 40 BLACK PIPE UNION, 250 LB	---	---	AS REQ'D	FSC	FSC	226	12" MANHOLE WITH 11-1/4" SKIRT WITH CAST IRON LID (GROUND ROD) PAINTED BLACK	OPW	104A-1200	1	FSC	FSC							
							107	2" SCHEDULE 40 BLACK 45-DEGREE ELBOW	---	---	AS REQ'D	FSC	FSC	227	ULTRA-LOW SULFUR HIGHWAY DIESEL FUEL-5"x5"--DECAL	COMPLIANCE SIGN	NHE-13330	1	FSC	FSC							
							108	2" BY 1"																			



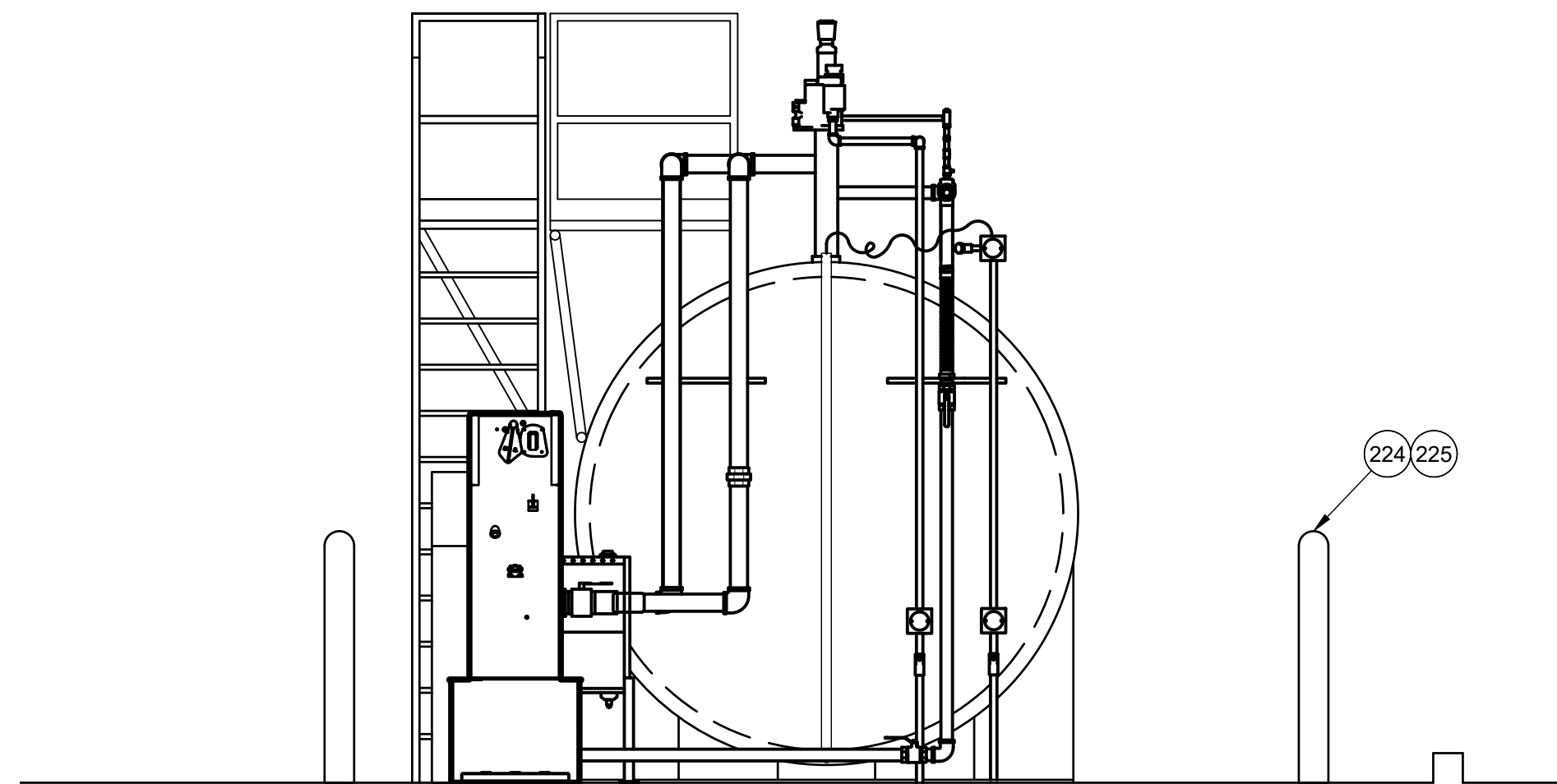




**A** ABOVE GROUND STORAGE TANK - ELEVATION  
SCALE: 3/8" = 1'-0"

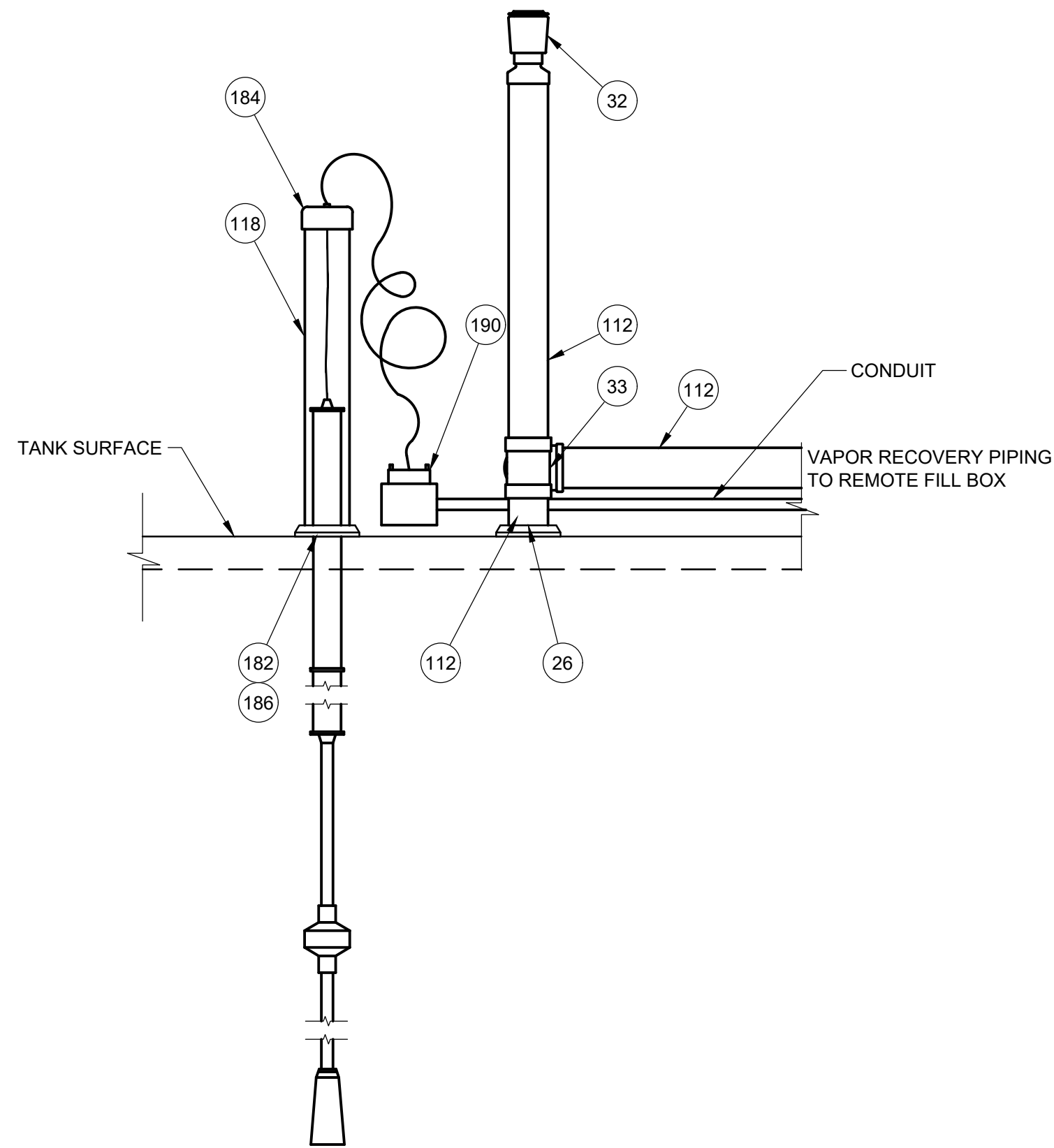


**B** ABOVE GROUND STORAGE TANK - DIESEL END  
SCALE: 3/8" = 1'-0"

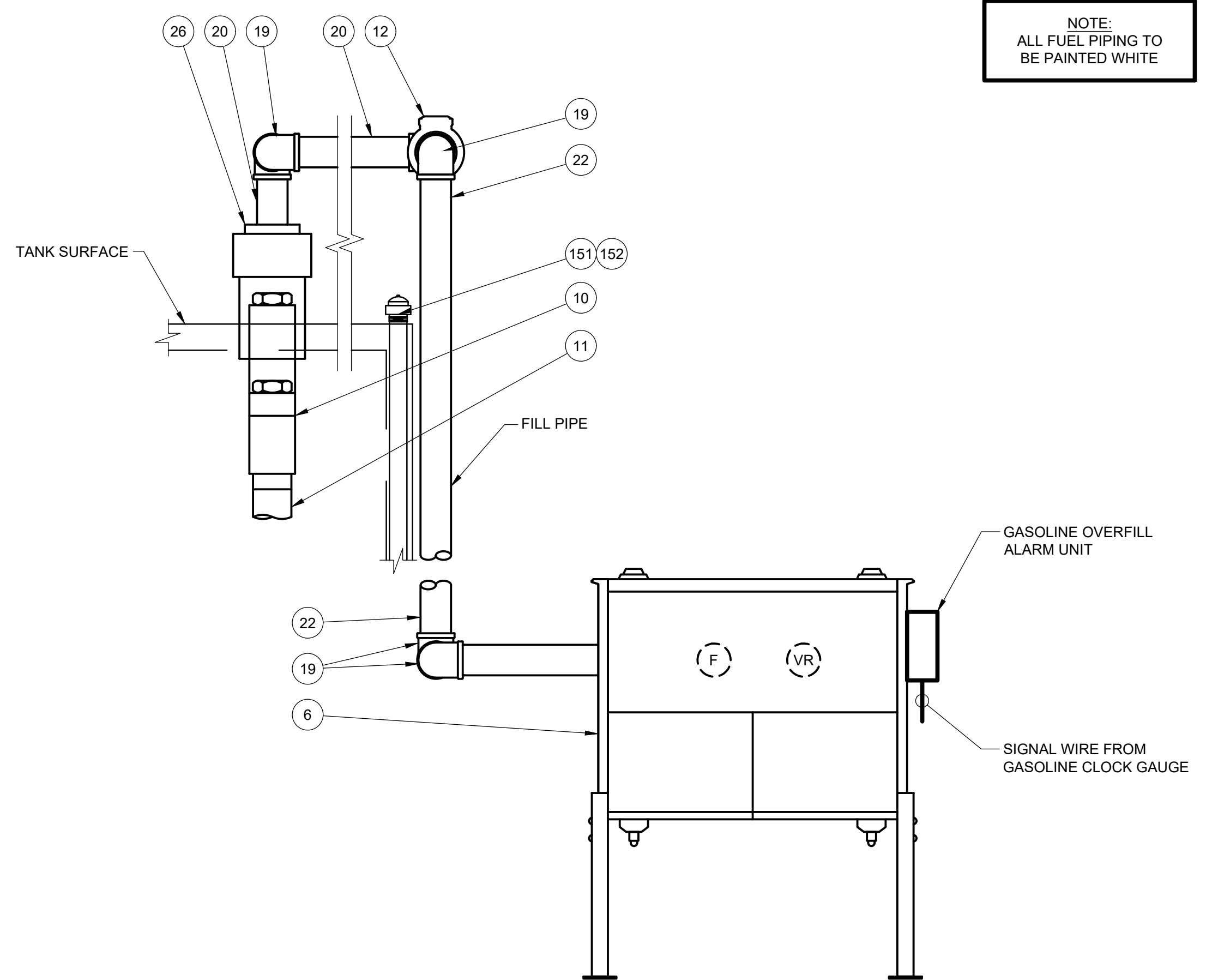


**C** ABOVE GROUND STORAGE TANK - GASOLINE END  
SCALE: 3/8" = 1'-0"

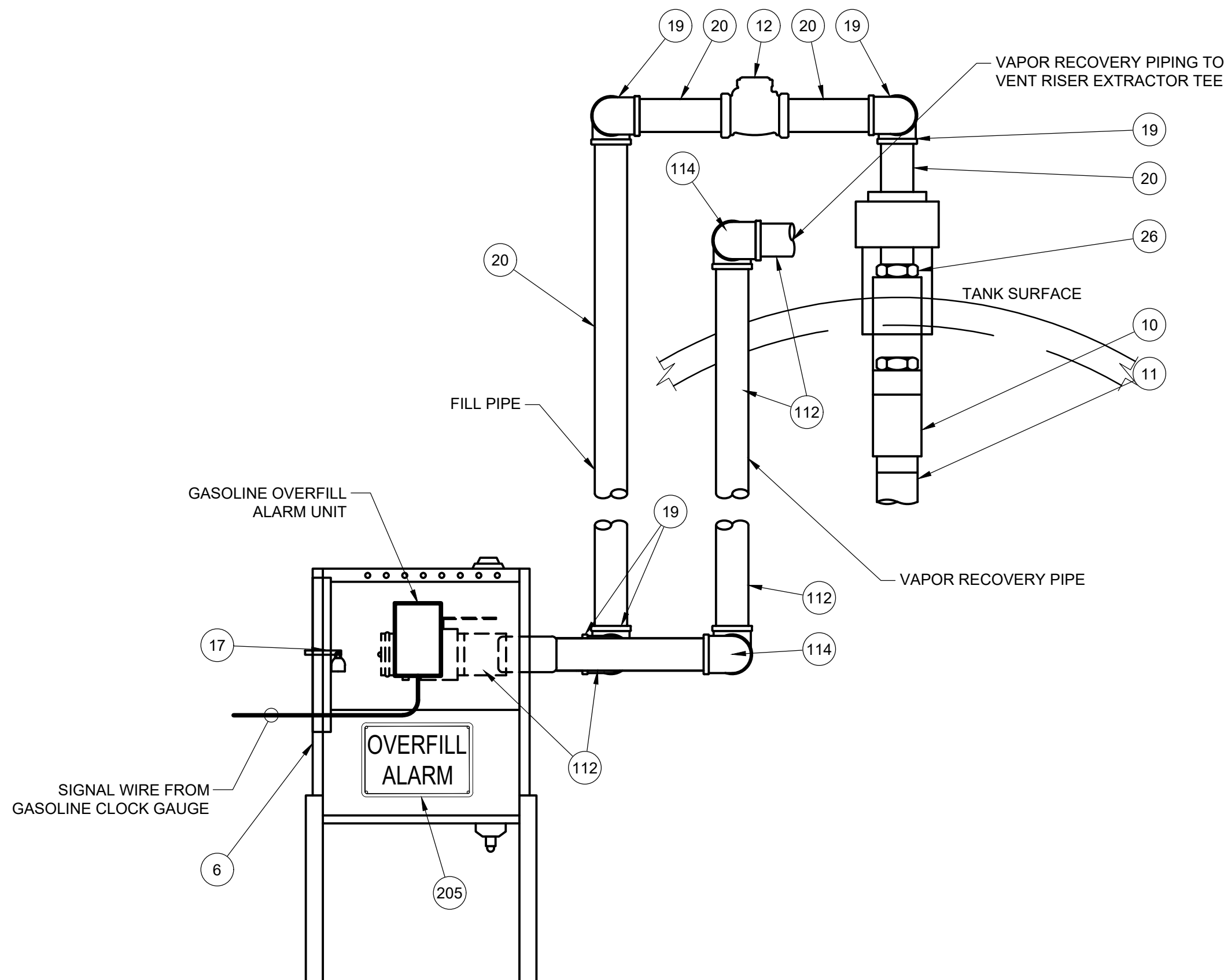
REVISIONS				
GLZ				
1/20/2023				
BID AND PERMIT SET				
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VAN BUREN TOWNSHIP 46425 TYLER ROAD VAN BUREN, MI 48111				
TANK LAYOUT				
DIAMOND Z ENGINEERING, INC. 5670 STATE ROAD CLEVELAND, OH 44134 PHONE: 440-842-6501				
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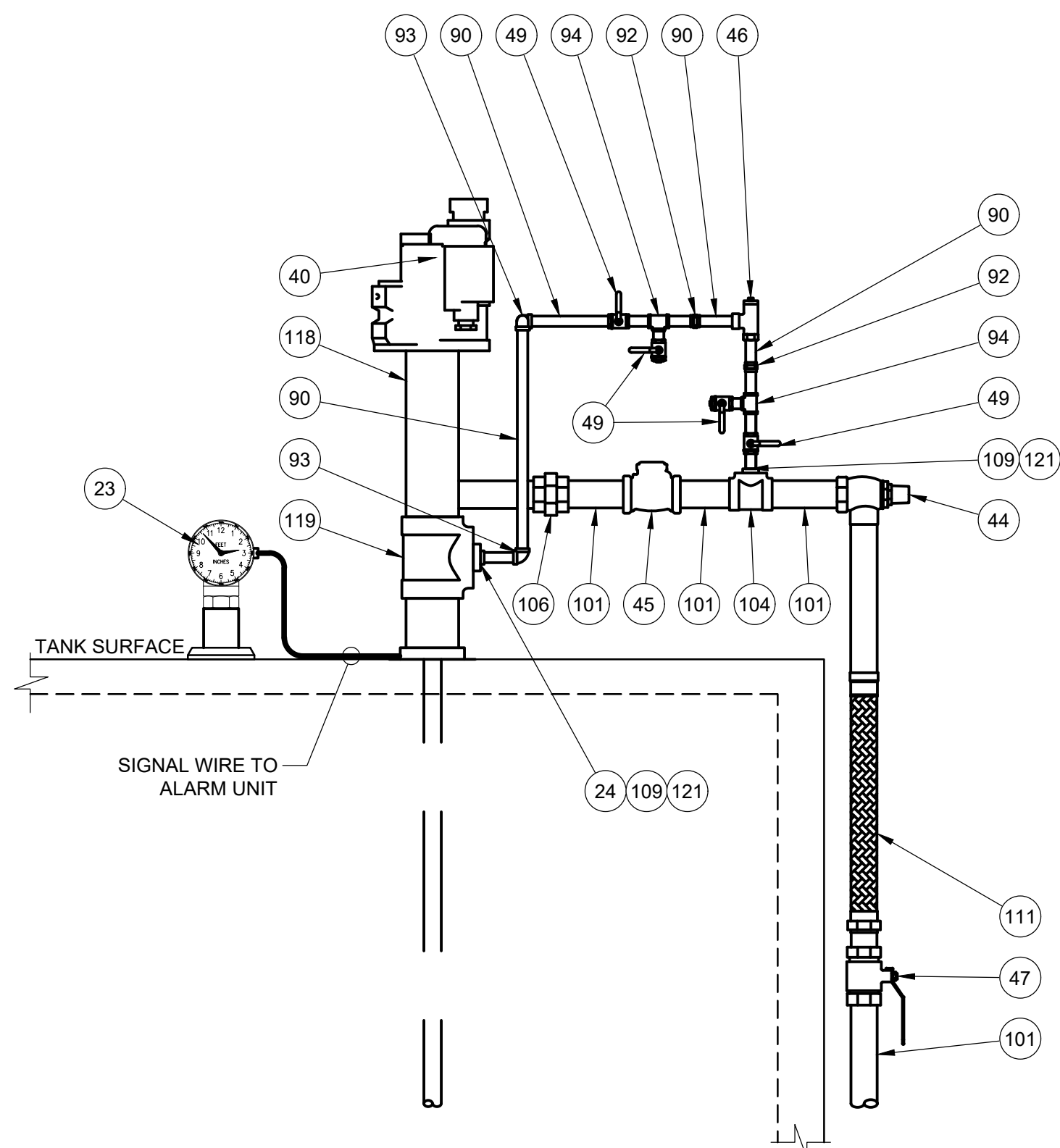
**A** TANK GAUGE AND VENT RISER DETAILS  
SCALE: 1" = 1'-0"



**B** GASOLINE FILL ASSEMBLY DETAILS - FRONT ELEVATION  
SCALE: 1" = 1'-0"



**C** GASOLINE FILL ASSEMBLY DETAILS - SIDE ELEVATION  
SCALE: 1" = 1'-0"



**D** SUBMERSIBLE PUMP AND CLOCK GAUGE DETAILS  
SCALE: 1" = 1'-0"

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1	2	3	4	5	6

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GASOLINE TANK EQUIPMENT DETAILS

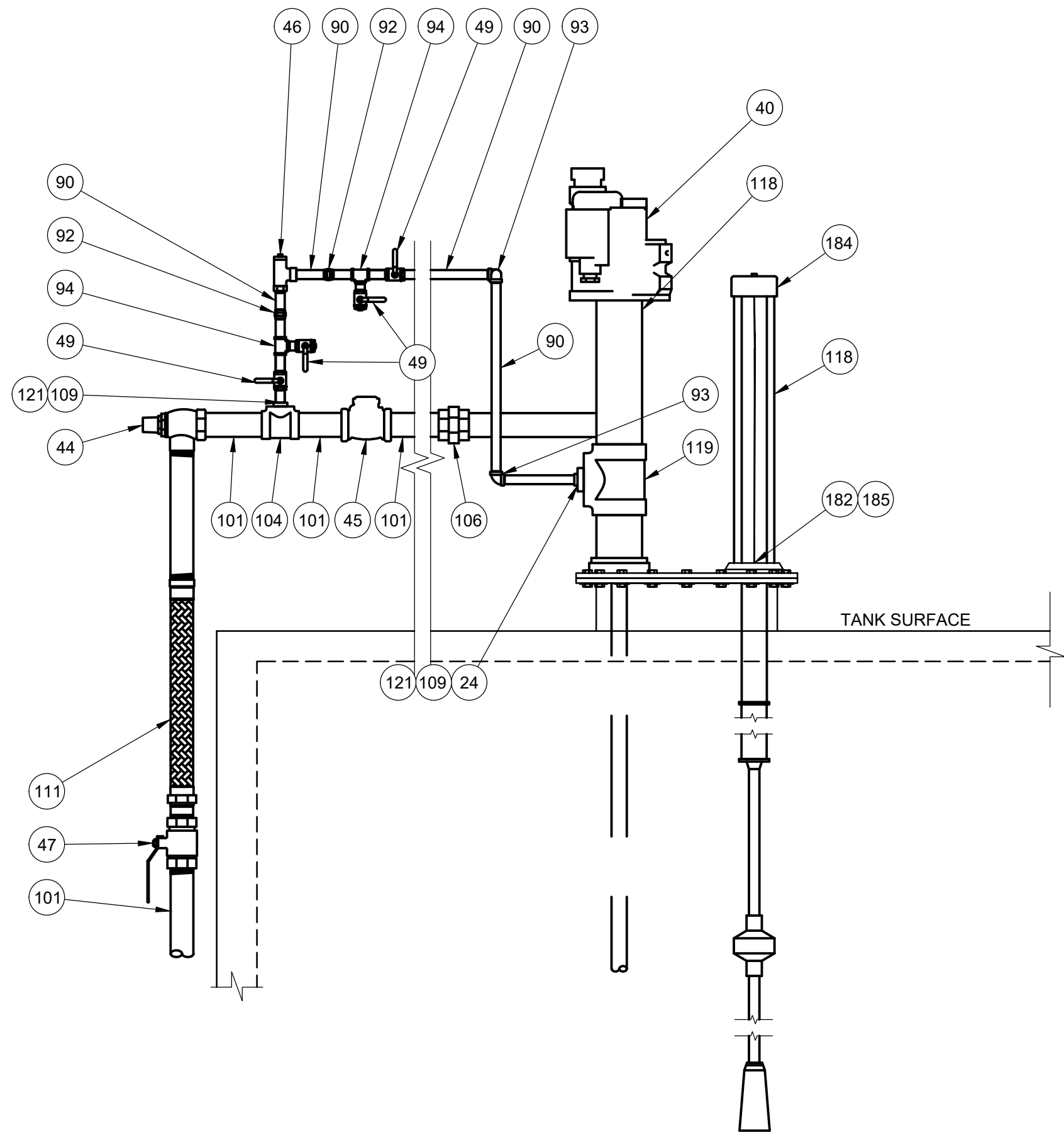
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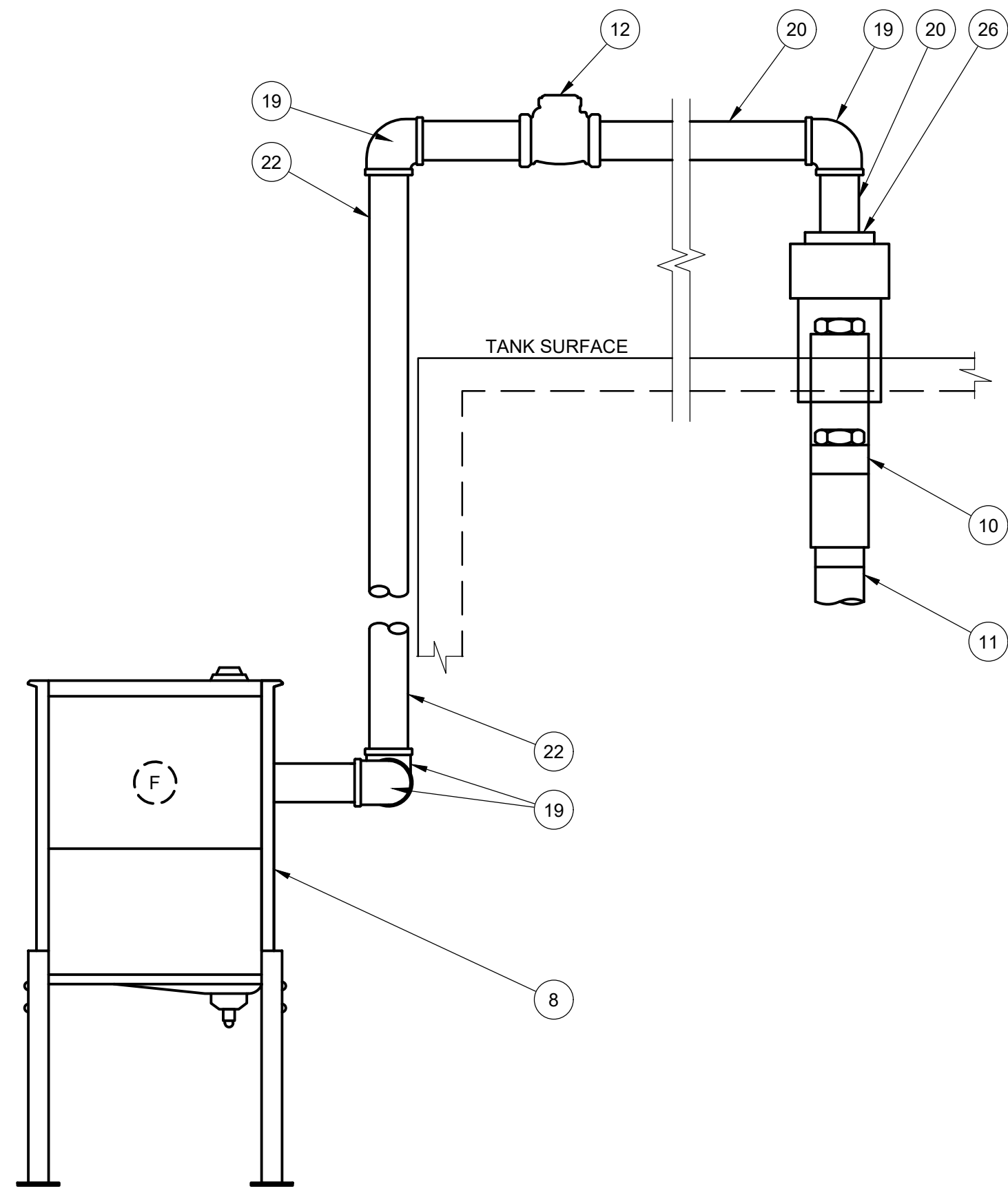
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DRAWN BY: GLZ	PROJECT NO.: MI-4008

DRAWING NO.  
**T-3**

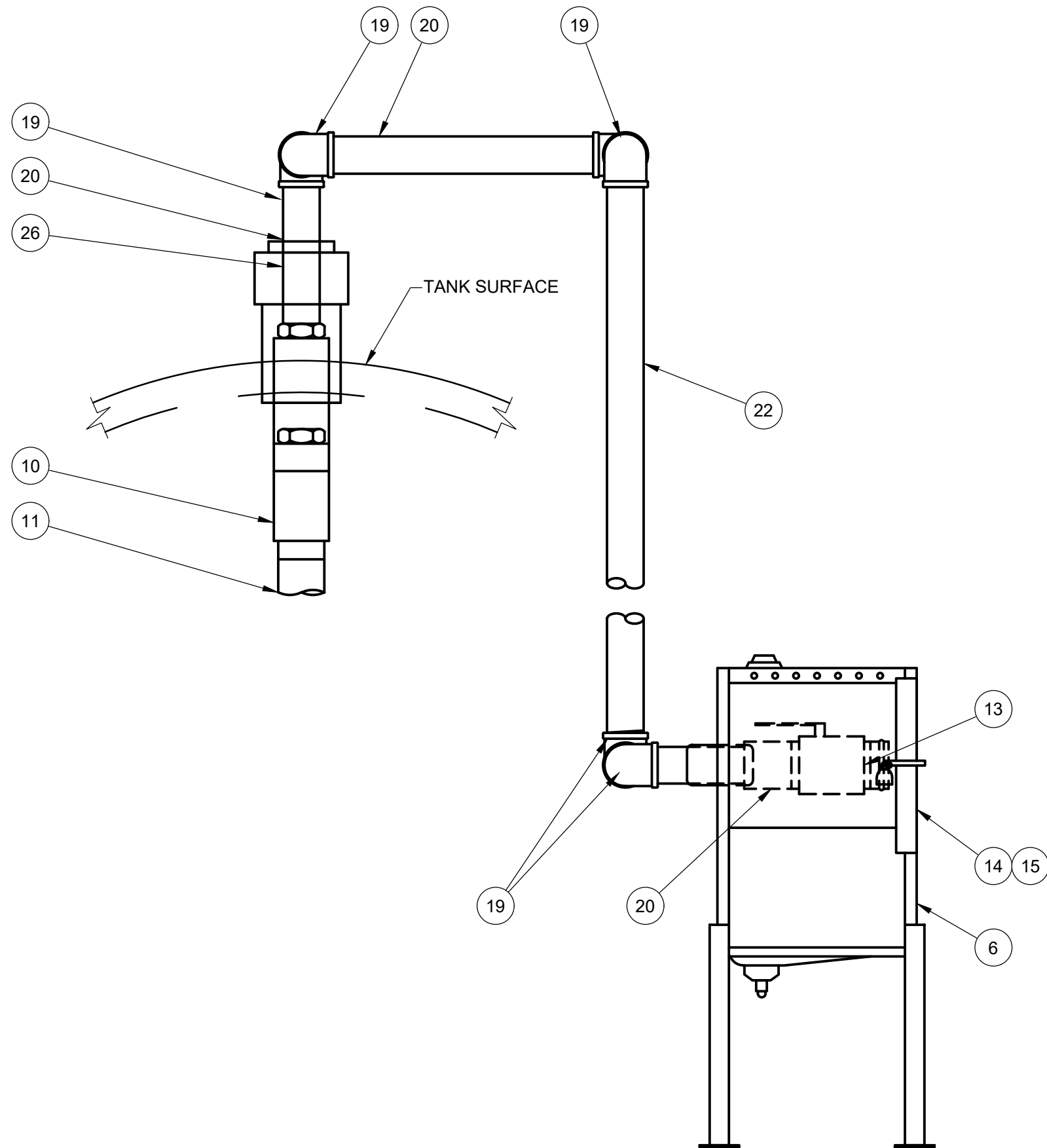




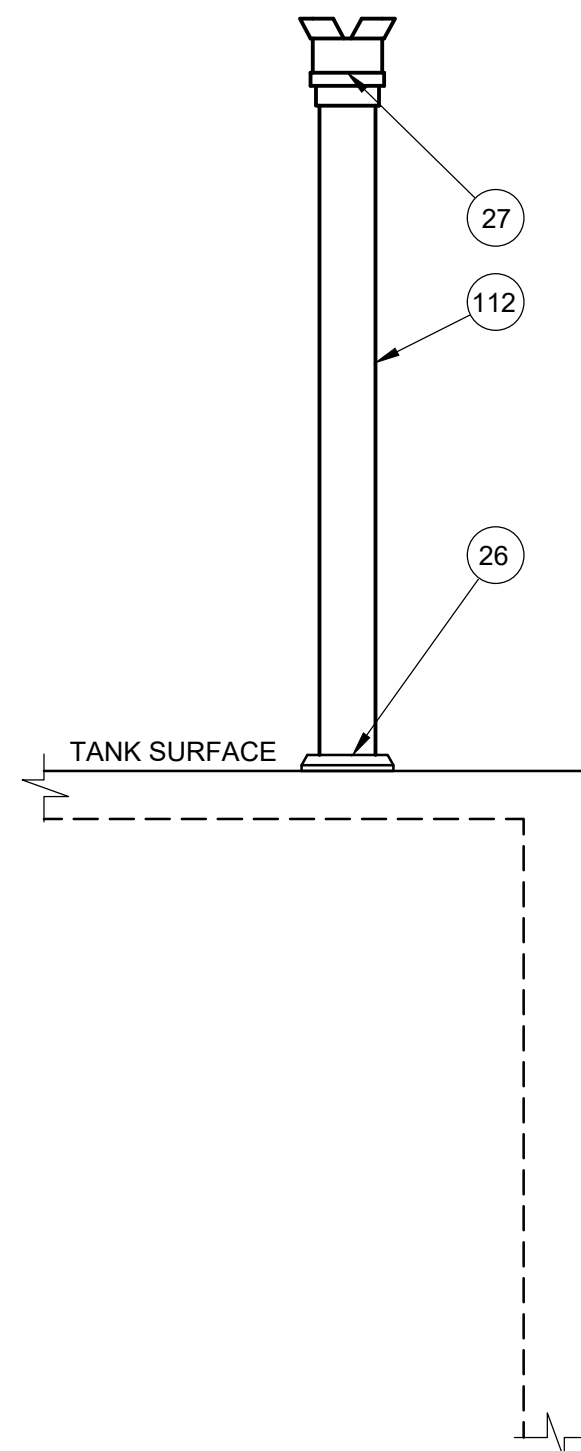
**A** TANK GAUGE AND SUBMERSIBLE PUMP DETAILS  
SCALE: 1" = 1'-0"



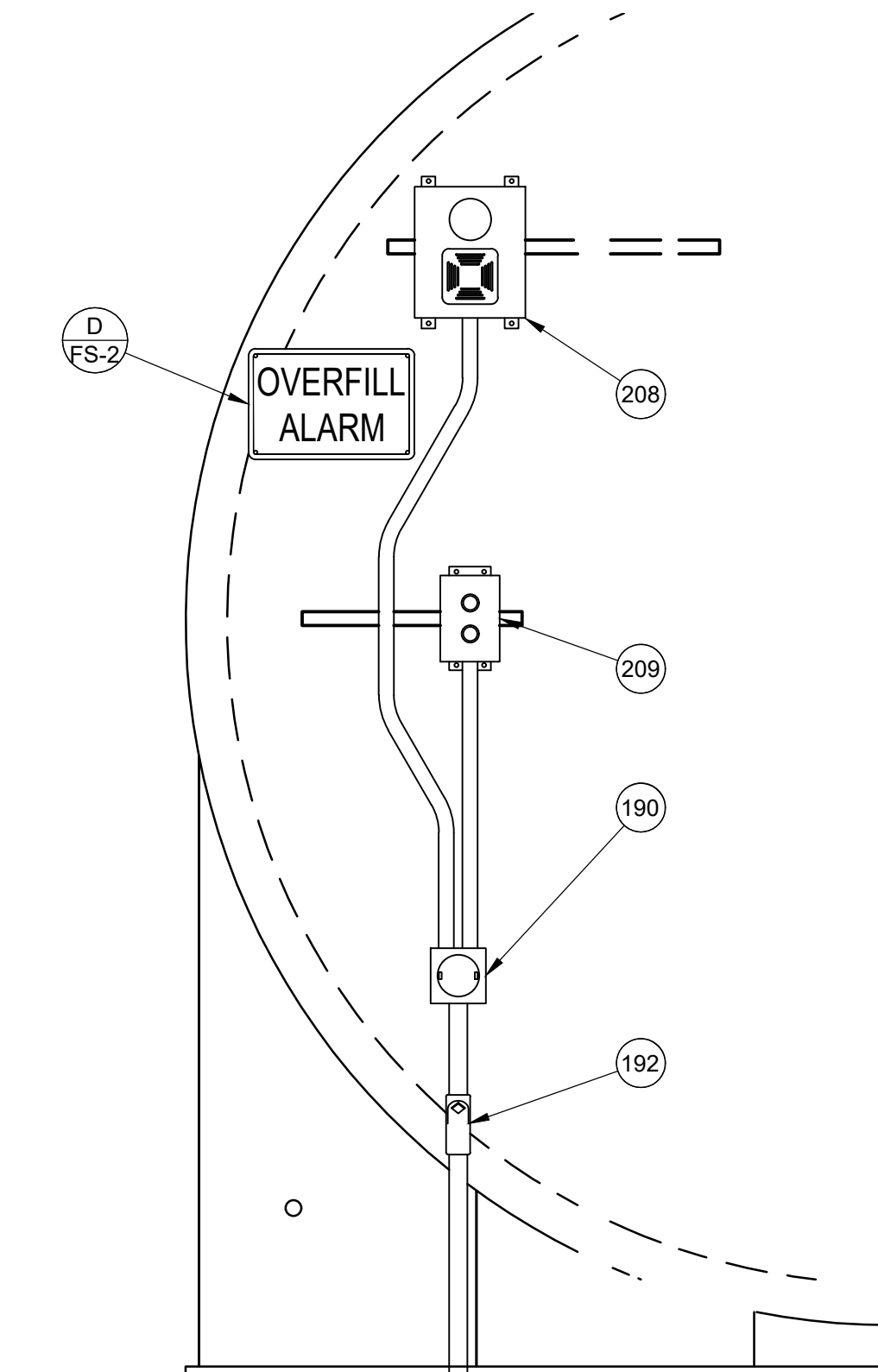
**B** DIESEL FILL ASSEMBLY DETAILS - FRONT ELEVATION  
SCALE: 1" = 1'-0"



**C** DIESEL FILL ASSEMBLY DETAILS - SIDE ELEVATION  
SCALE: 1" = 1'-0"



**D** VENT DETAILS  
SCALE: 1" = 1'-0"



**E** OVERFILL ALARM AND  
ACKNOWLEDGEMENT SWITCH DETAILS  
SCALE: 1" = 1'-0"

NOTE:  
ALL FUEL PIPING TO  
BE PAINTED WHITE

NOTE:  
ONLY OVERFILL ALARM  
EQUIPMENT SHOWN FOR  
CLARITY

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GLZ					
1/20/2023					

BID AND PERMIT SET					
1	2	3	4	5	6

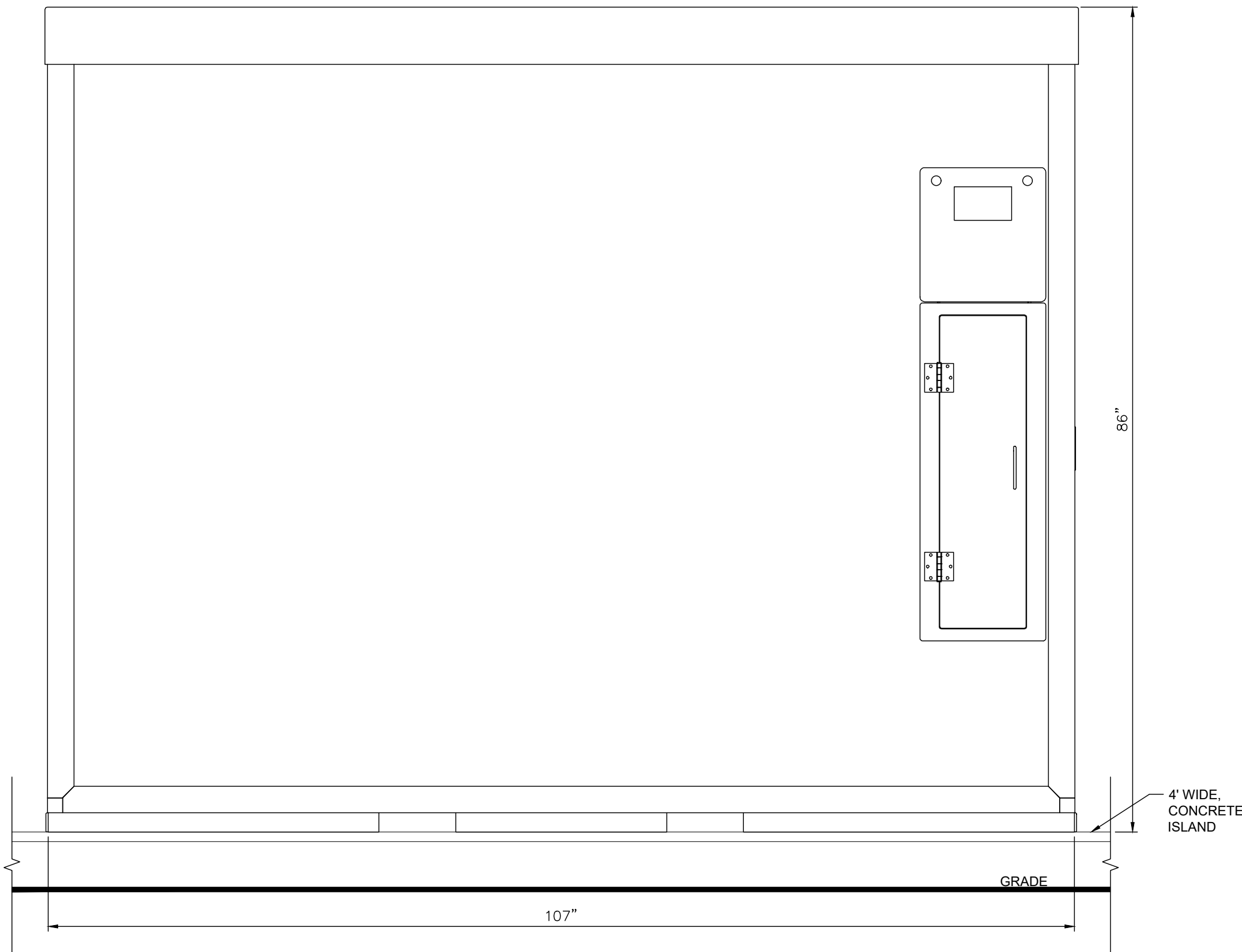
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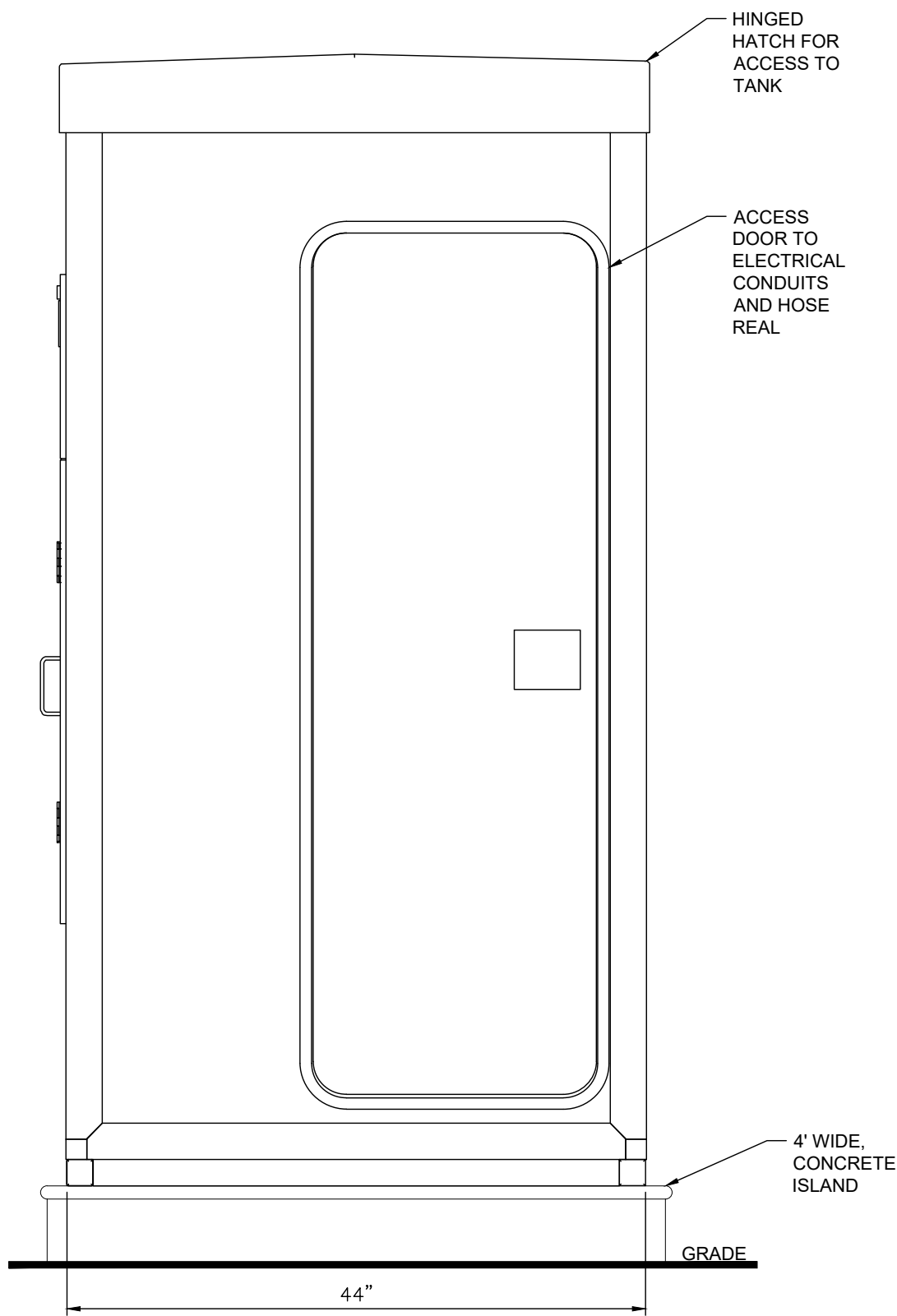
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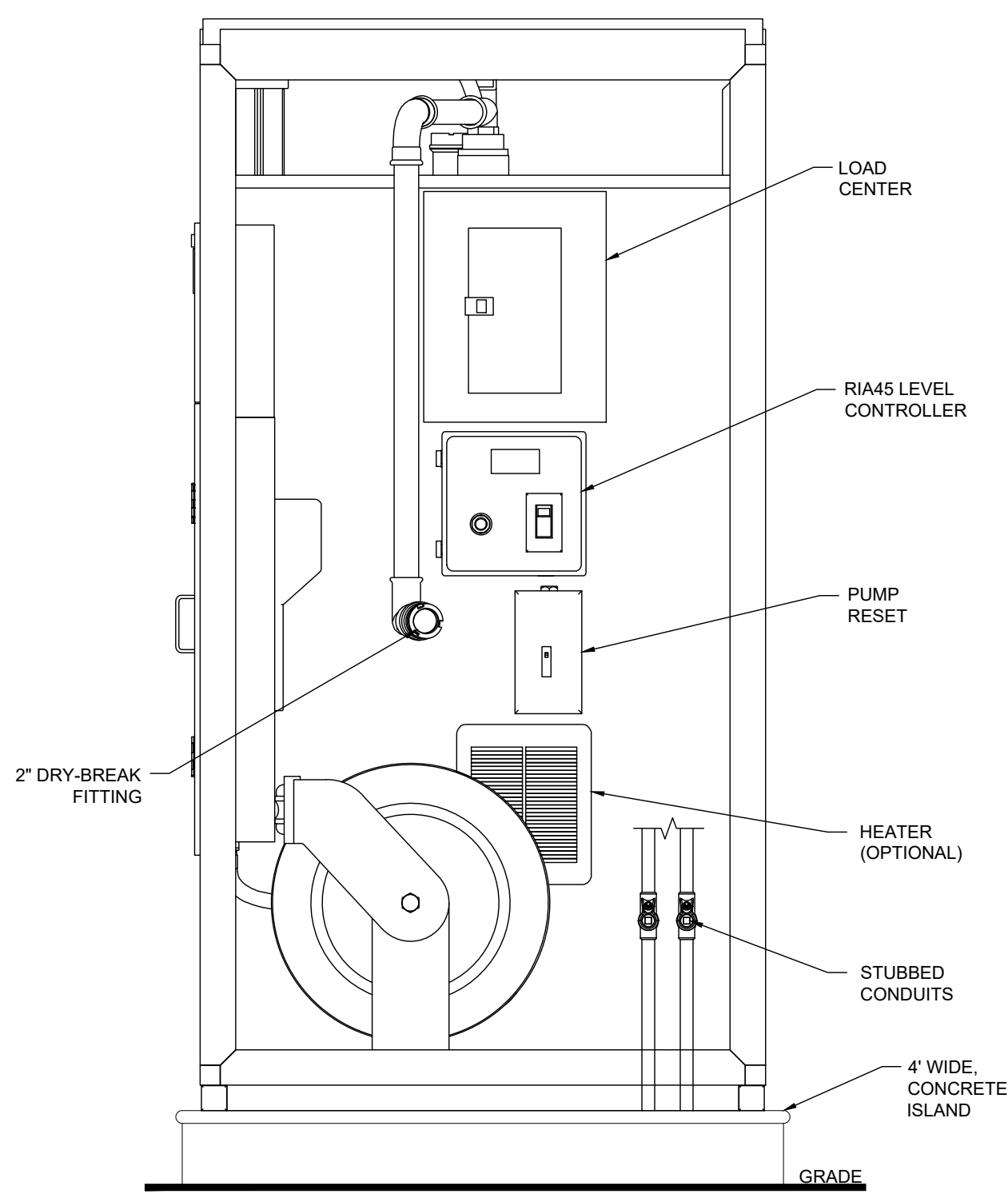
DRAWING NO.  
**T-4**



**A** EXTERIOR SIDE VIEW  
SCALE: 1" = 1'-0"

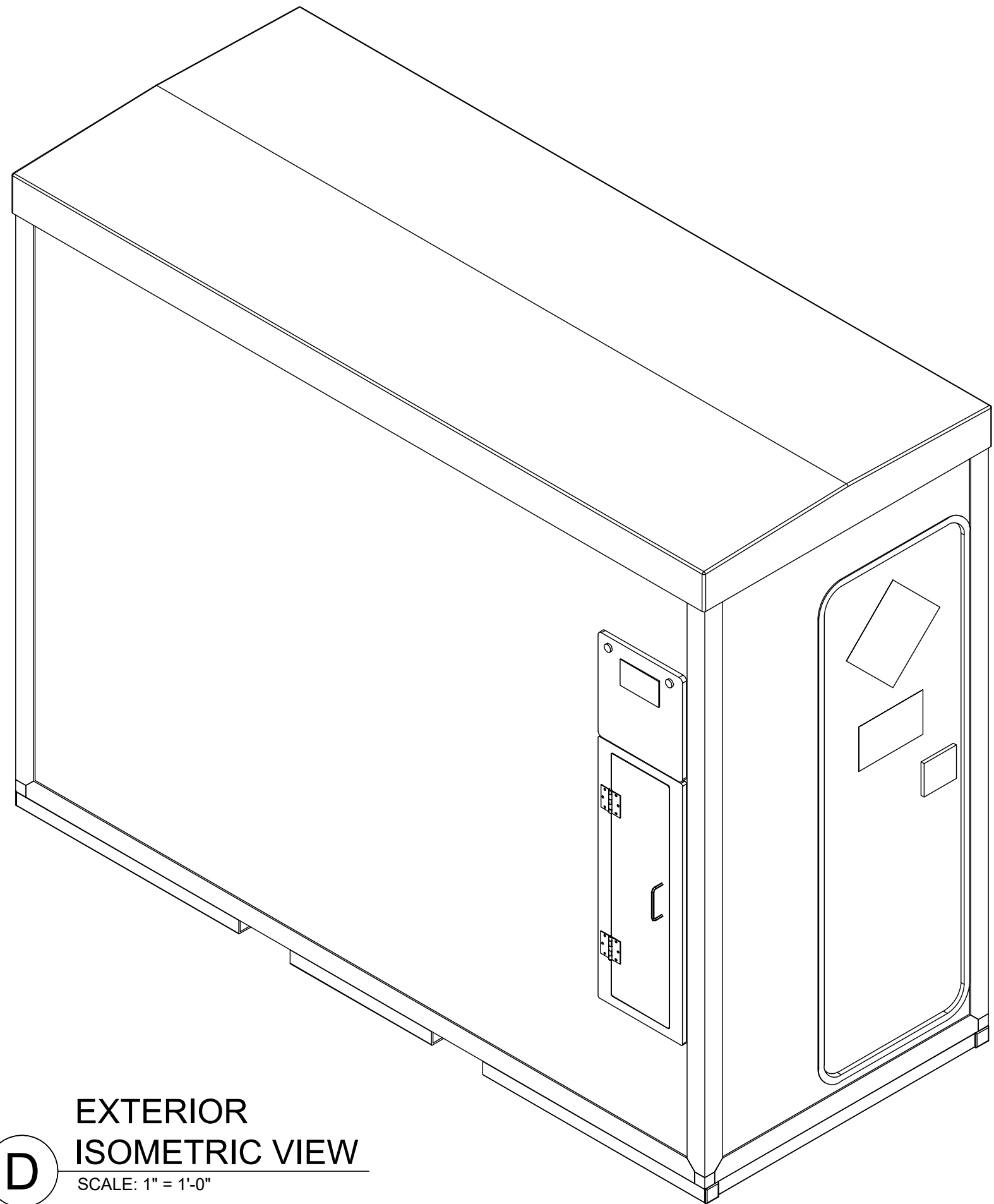


**B** EXTERIOR FRONT VIEW  
SCALE: 1" = 1'-0"

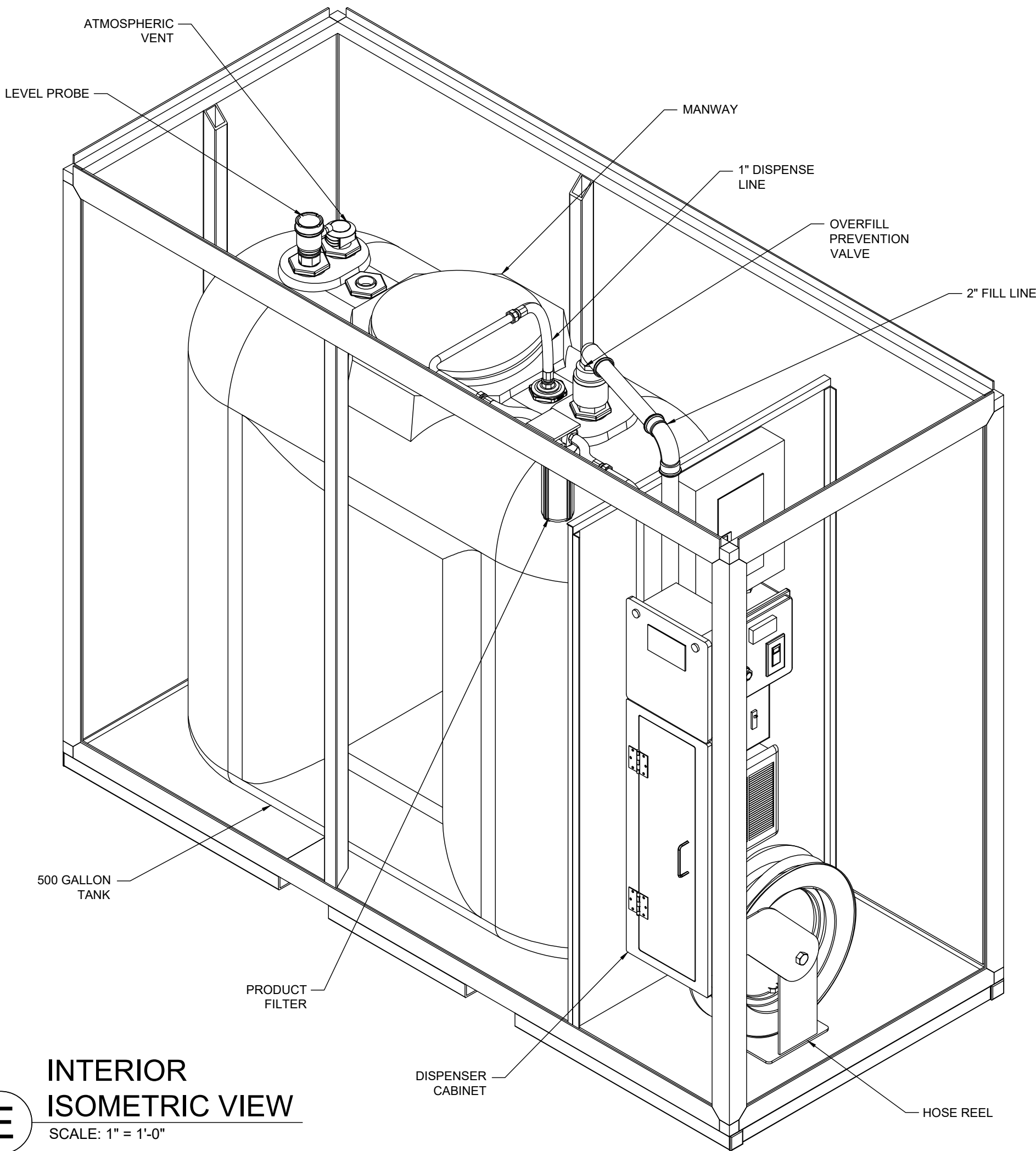


**C** INTERIOR FRONT VIEW  
SCALE: 1" = 1'-0"

- NOTES:
1. DIESEL EXHAUST FLUID (DEF) STORAGE UNIT BY BLUE1USA.
  2. REQUIRES (2) 1" CONDUITS FOR POWER AND SPARE THAT SHALL BE STUBBED UP IN ELECTRICAL ACCESS CLOSET.



**D** EXTERIOR ISOMETRIC VIEW  
SCALE: 1" = 1'-0"



**E** INTERIOR ISOMETRIC VIEW  
SCALE: 1" = 1'-0"

TECHNICAL SPECIFICATIONS

Commercial Mini-Bulk DEF Storage and Dispensing System  
500 Gallon model

<b>Sizes</b> 500 Gallon	Dims: 44" w x 107" l x 89" h. Weight: Approx. 1800 lbs
<b>Exterior Shell</b> Insulated Housing	R-6 Insulated FRP panels. Leak tight housing provides secondary containment.
<b>Color</b> Transport /Handling Heating Branding	White Integrated fork lift channels for handling Optional thermostatically controlled heater Blue1USA or custom branding
<b>Primary Tank</b> Type Volume Material Sensor Digital Display Overfill Alarm Filling Connection	Single wall HDPE Horizontal Tank 500 Gallons High Density Polyethylene Over fill and level probe Endress + Hauser FMI21 Endress + Hauser RIA 45 Acoustic Horn with reset button TODO 2" dry break connection, max filling speed 125 gal/min
<b>Submersible Pump</b> Manufacturer / Type Materials Electrical Convey Volume Convey Pressure Operating Temp.	Leader submersible pump – Bluediver 750, ½ HP, 2 impellers Stainless steel and plastic 110 V, 60 Hz, 1.1 kW, max 24g/min, H max 79 ft. max 64 PSI 0° to +113° F
<b>Flow Meter</b> Manufacturer/ type Measuring Material (in contact w. media) Metering Range Operating pressure Metering Precision at Flow Rate Pressure Drop Connection Operating Temp. Pulse Output	Puls1 Turbinox Turbine meter Stainless Steel Housing 3-11 gal/min 300 PSI +/- 1 %, 3-11 gal/min < 2.2 psi G1" male 14" to +122° F Single channel Reed Switch, 100:1 pulse/gal, not W&M approved
<b>Dispenser</b>	Built in Stainless Steel dispenser with hose reel, 20' hose standard, OPW nozzle with magnetic mis-fill prevention spout. 100:1 Pulse Output included for connection to card reader or fuel management system Single sided. Dispenser can be located on either side
<b>Electrical connections</b>	Prewired electrical components: certified to UL-508A and CSA C22.2 No. 14-10 standards Unit must be installed in non-hazardous area, outside of Class 1, Div. 2 zone Wired per NEC, NFPA 70 Single Phase, 110V, 30 amp service required
<b>OPTIONS</b>	Heater w/ Thermostat Housing Exhaust Fan Overfill Prevention Valve Product Filter Remote Monitoring Second Dispenser  Variable 375-1500 Watt, Fan Forced, UL listed w/ integral thermostatic control 4.5" 110V, 35 CFM, with timer relay Stainless Steel Overfill Prevention Valve 1 micron Polypropylene cartridge filter and housing Veeder Root Mag Probe .2 gph, 2" Float. Requires site controller Dual dispensing options for multiple lane fueling

Commercial Mini-Bulk Technical Specifications v040106

Page 1 of 1

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DEF TANK DETAILS

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SCALE:  
1" = 1'-0"

DATE:  
1/20/2023

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GLZ

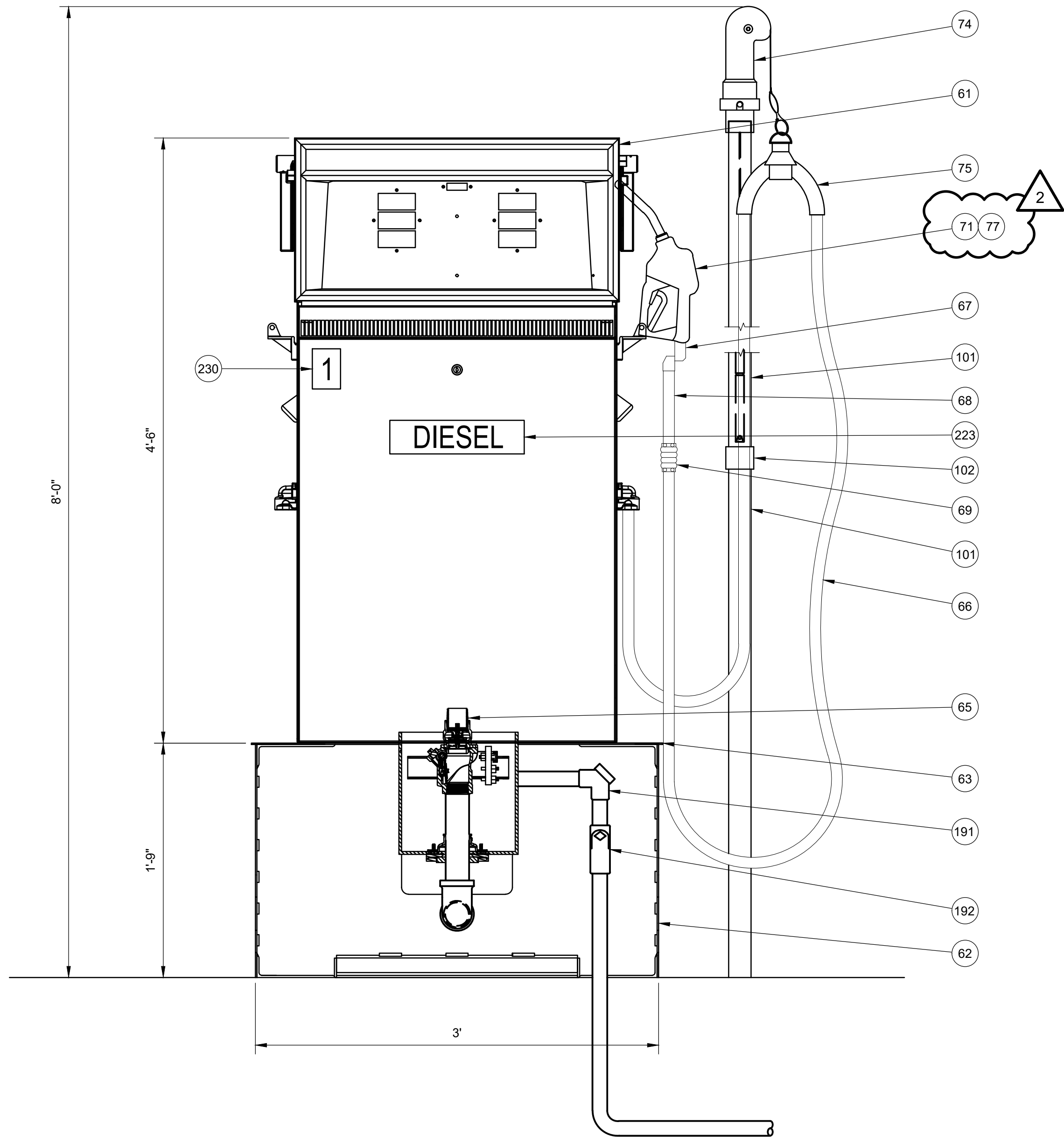
PROJECT NO.:  
MI-4008

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T-5

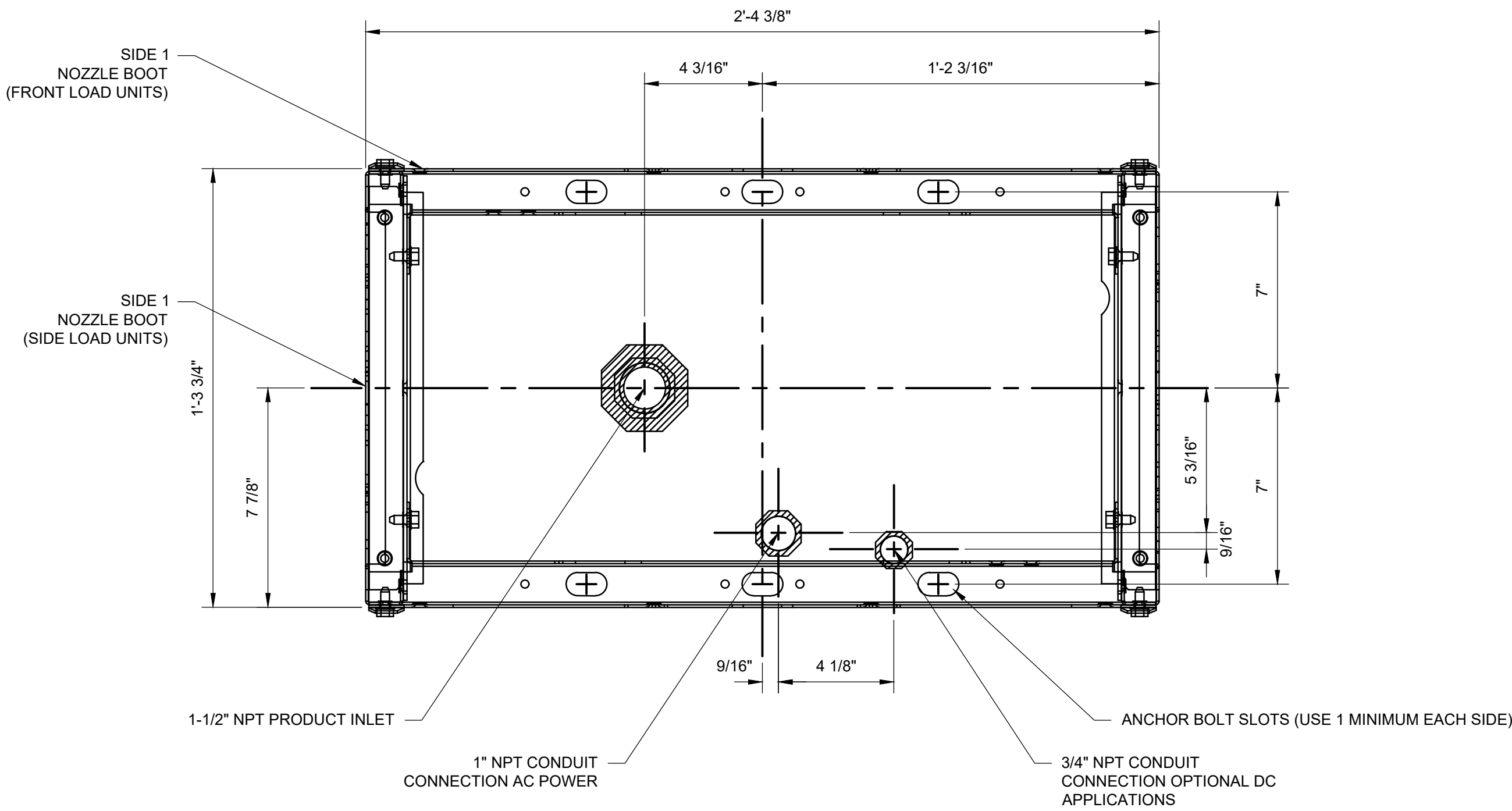


NOTE:  
ALL FUEL PIPING AND  
HOSE MASTS TO BE  
PAINTED WHITE

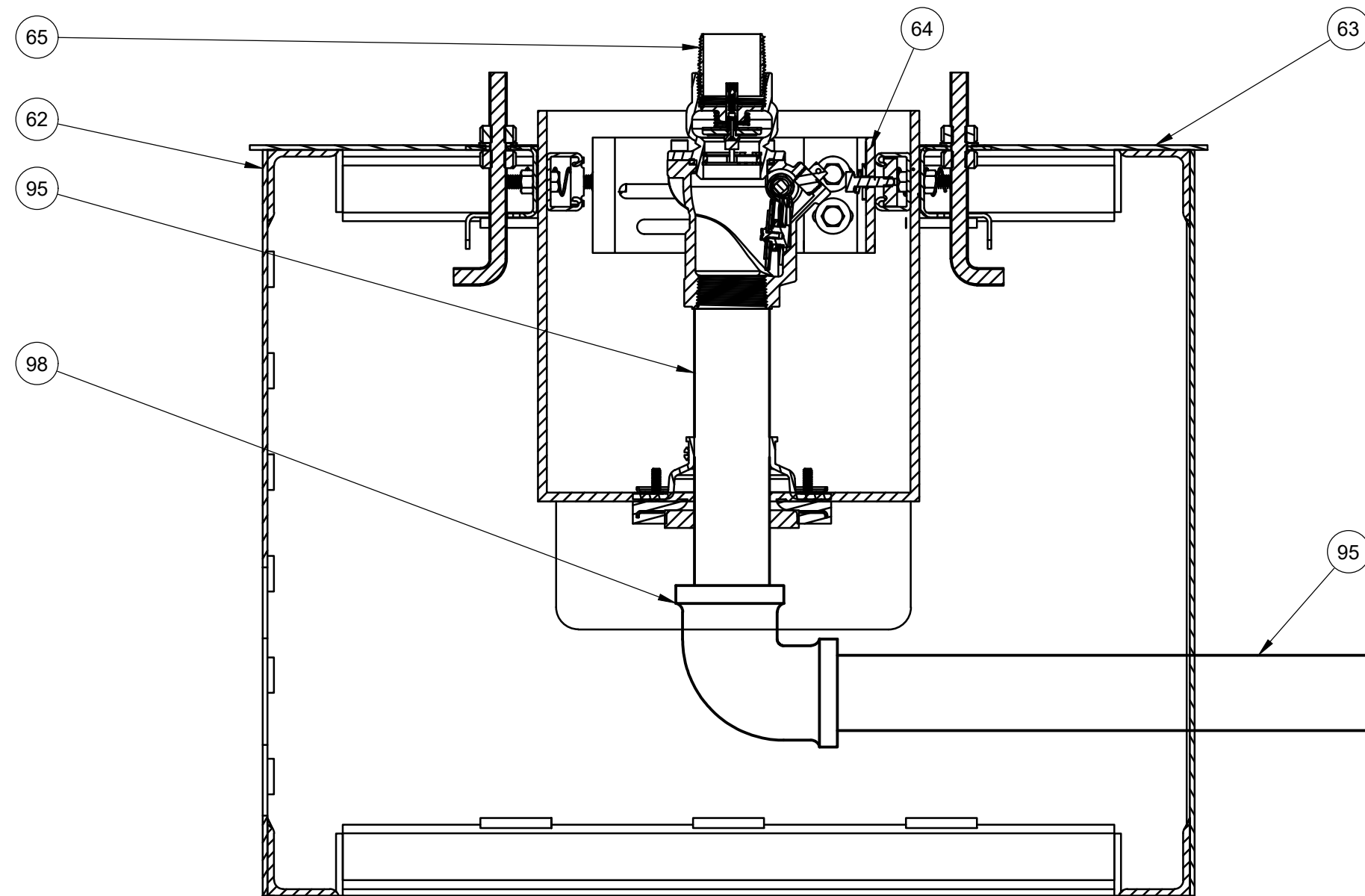
NOTE:  
FACTORY FUEL FILTERS WILL BE  
REPLACED AFTER DISPENSERS  
ARE PURGED.



**A** **DISPENSER AND PEDESTAL OVERVIEW**  
SCALE: 1-1/2" = 1'-0"



**B** **DISPENSER MOUNTING DIAGRAM**  
SCALE: 3" = 1'-0"

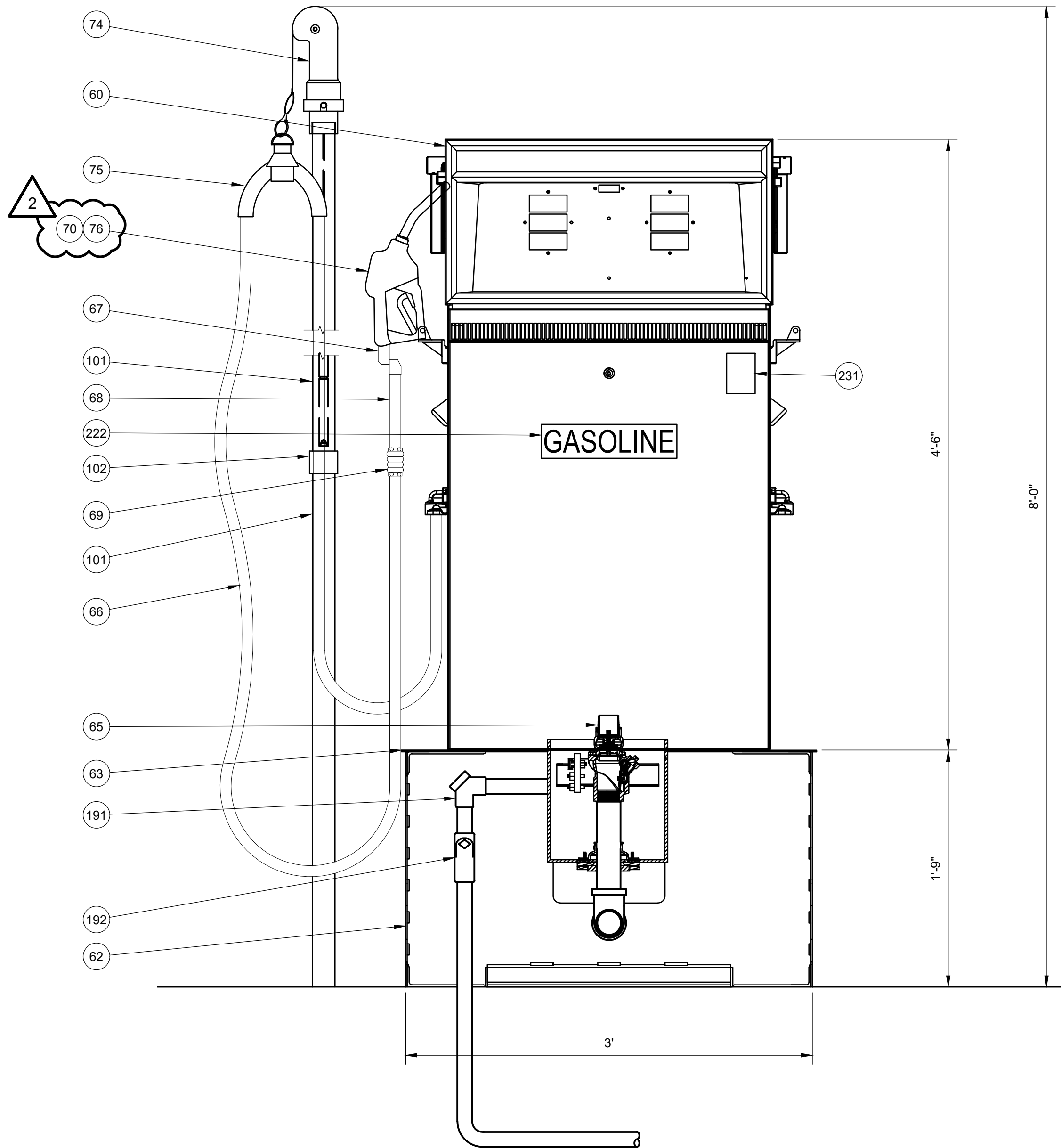


**C** **DISPENSER PEDESTAL INTERIOR**  
SCALE: 3" = 1'-0"

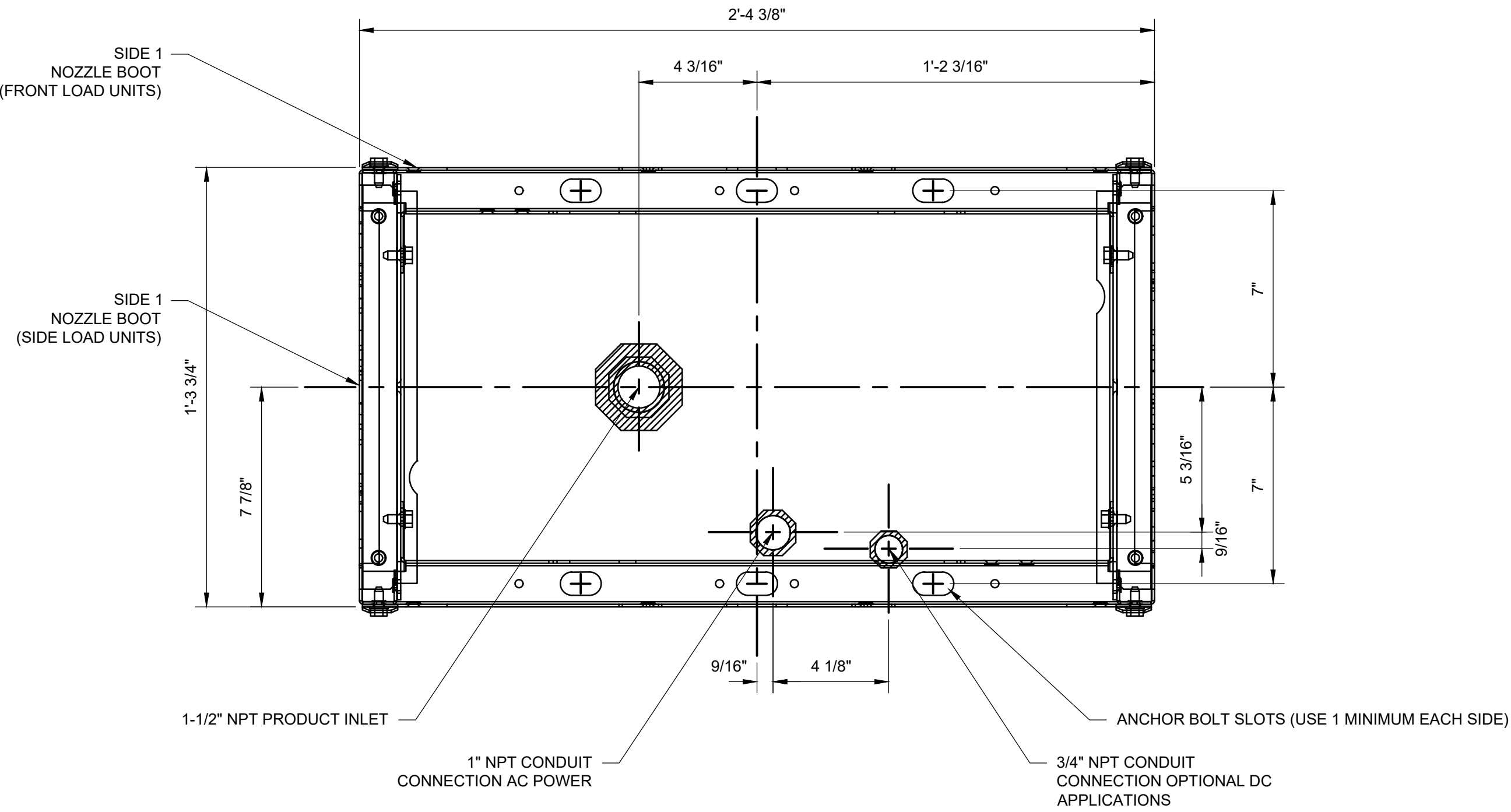
REVISIONS					
GLZ	1/20/2023				
ERK	4/6/2023				

NOTE:  
ALL FUEL PIPING AND  
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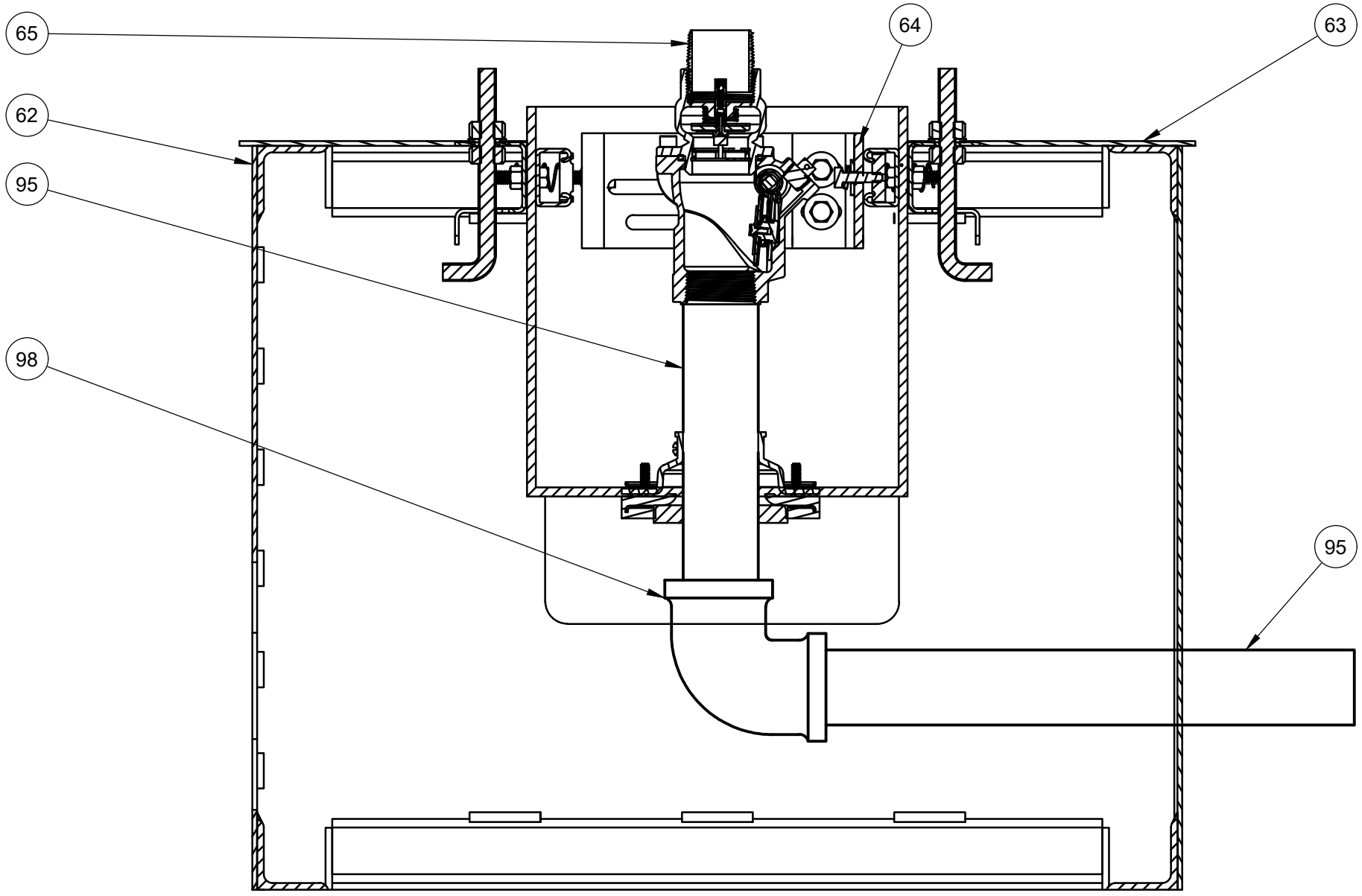
NOTE:  
FACTORY FUEL FILTERS WILL BE  
REPLACED AFTER DISPENSERS  
ARE PURGED.



**A** **DISPENSER AND PEDESTAL OVERVIEW**  
SCALE: 1-1/2" = 1'-0"



**B** **DISPENSER MOUNTING DIAGRAM**  
SCALE: 3" = 1'-0"



**C** **DISPENSER PEDESTAL INTERIOR**  
SCALE: 3" = 1'-0"

REVISIONS				
GLZ	ERK			
1/20/2023	4/6/2023			

BID AND PERMIT SET	REVISED BID AND PERMIT SET			

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**DIAMOND Z ENGINEERING, INC.**  
GASOLINE DISPENSER DETAILS

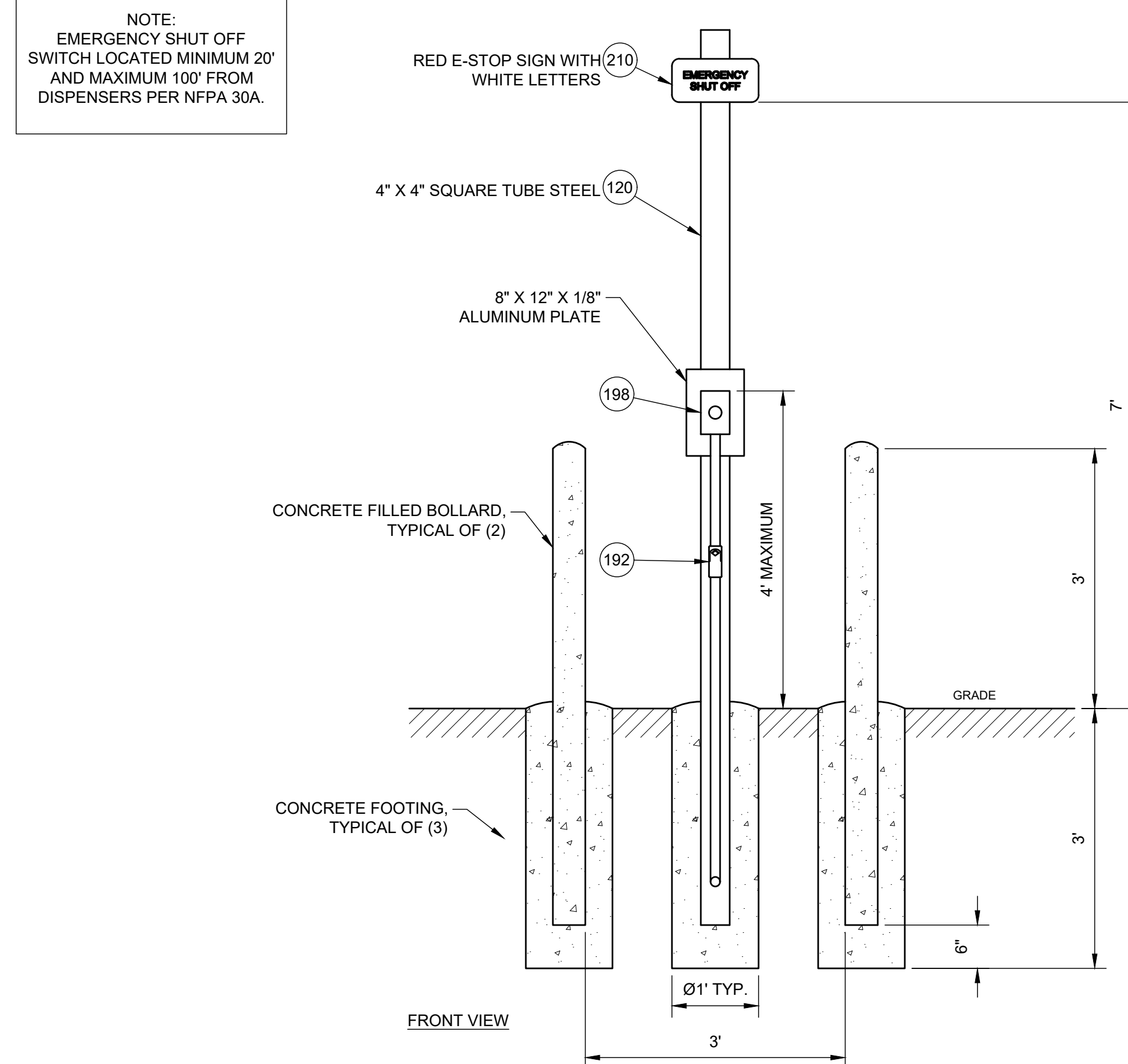
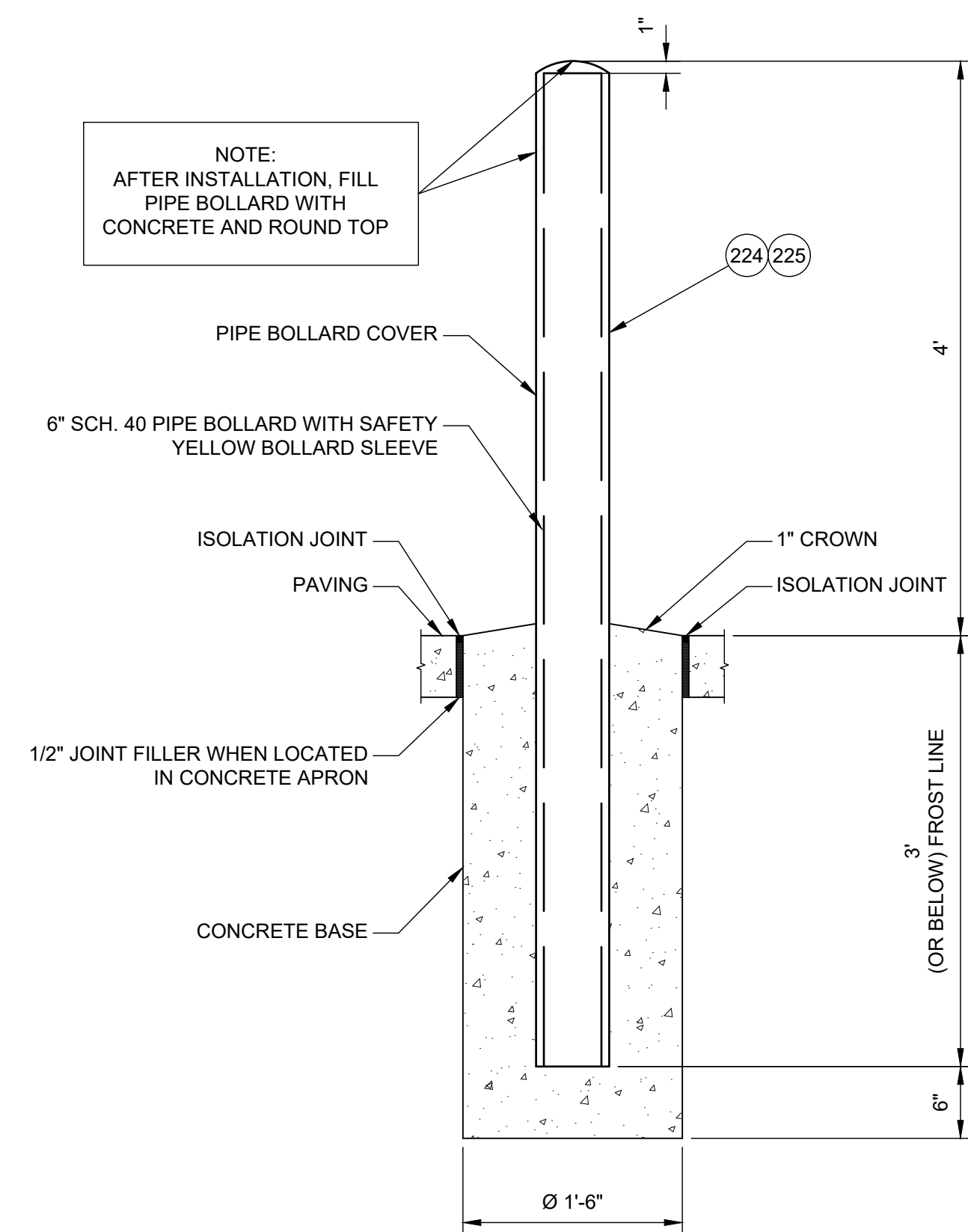
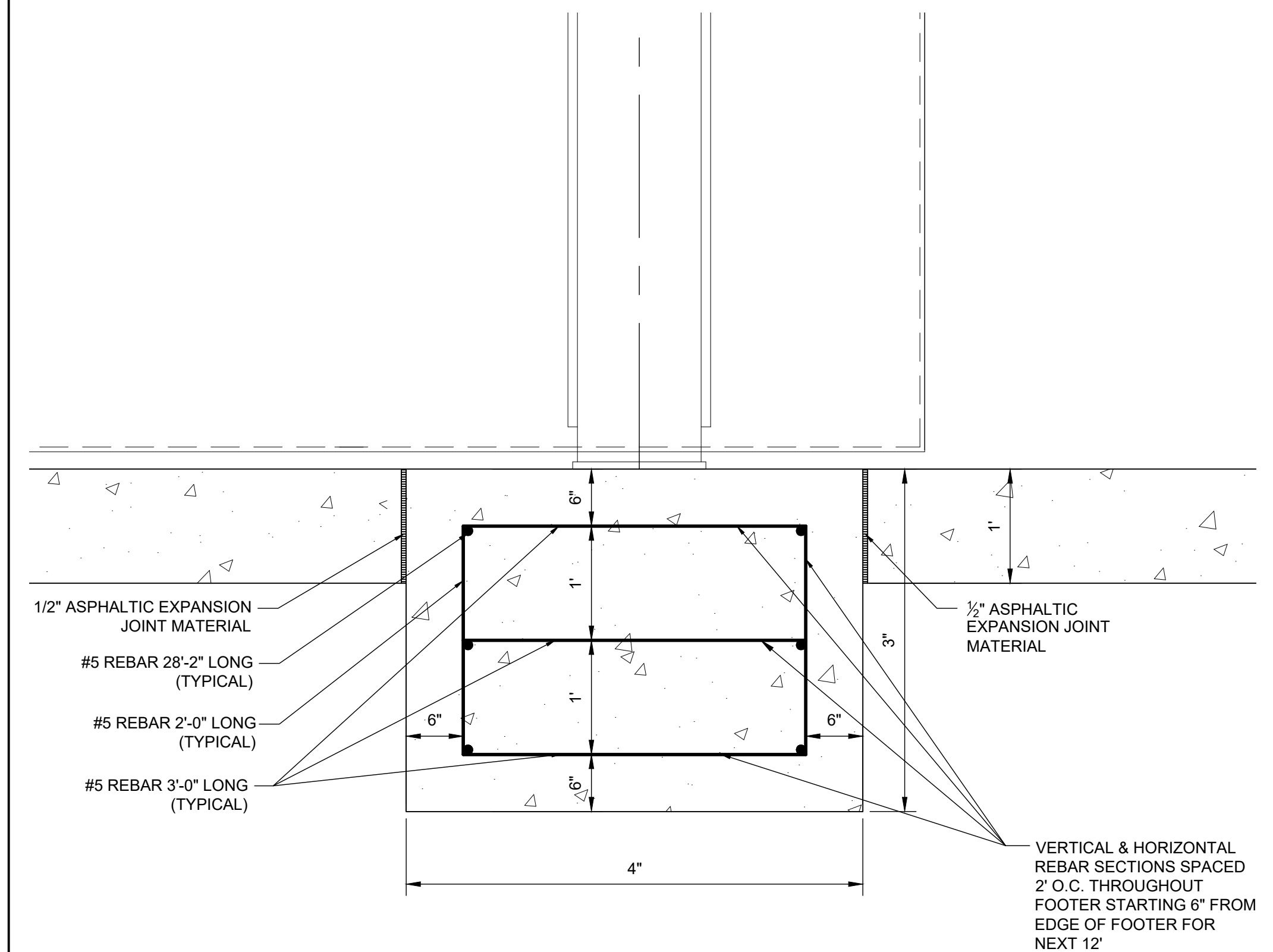
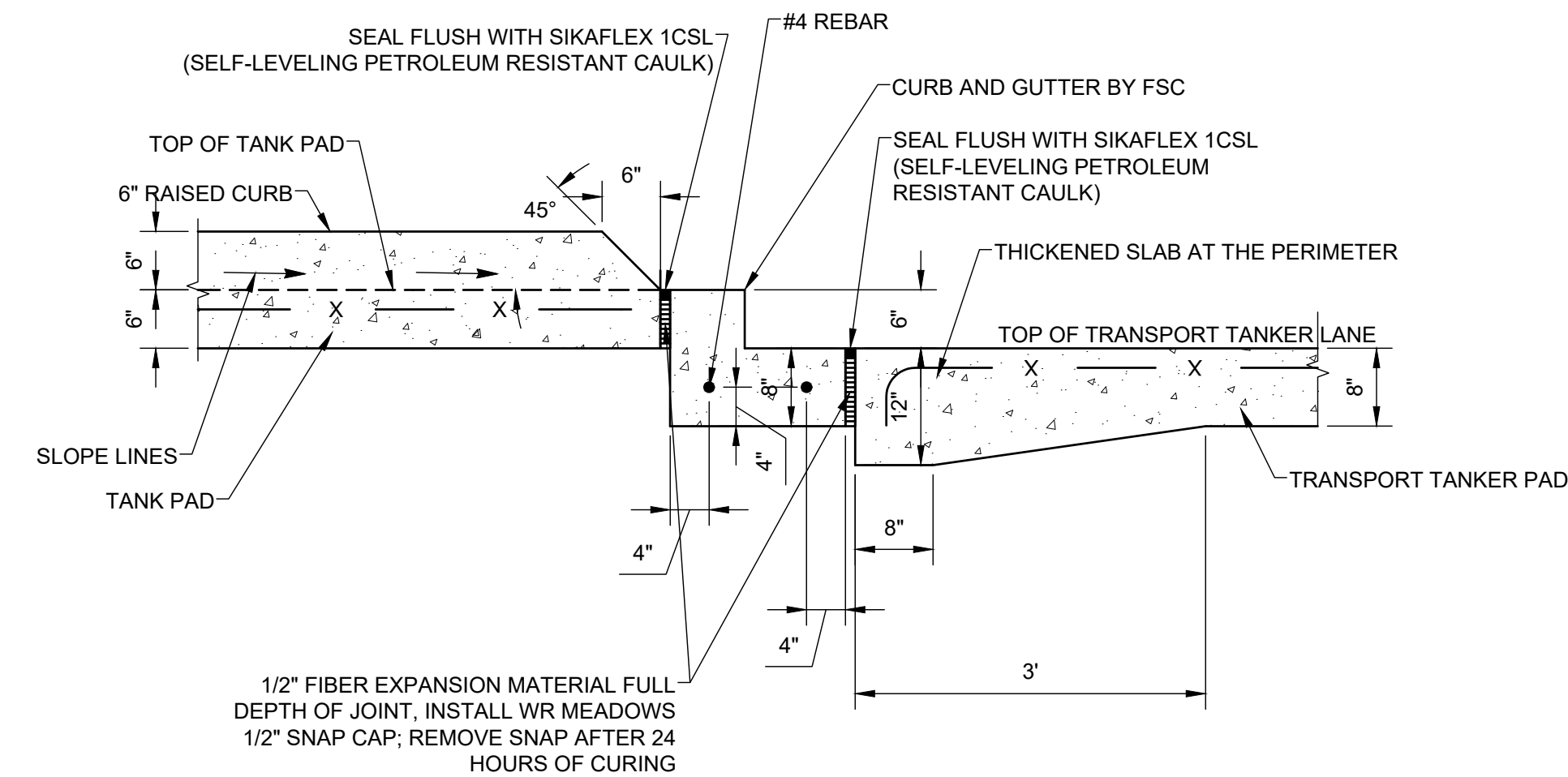
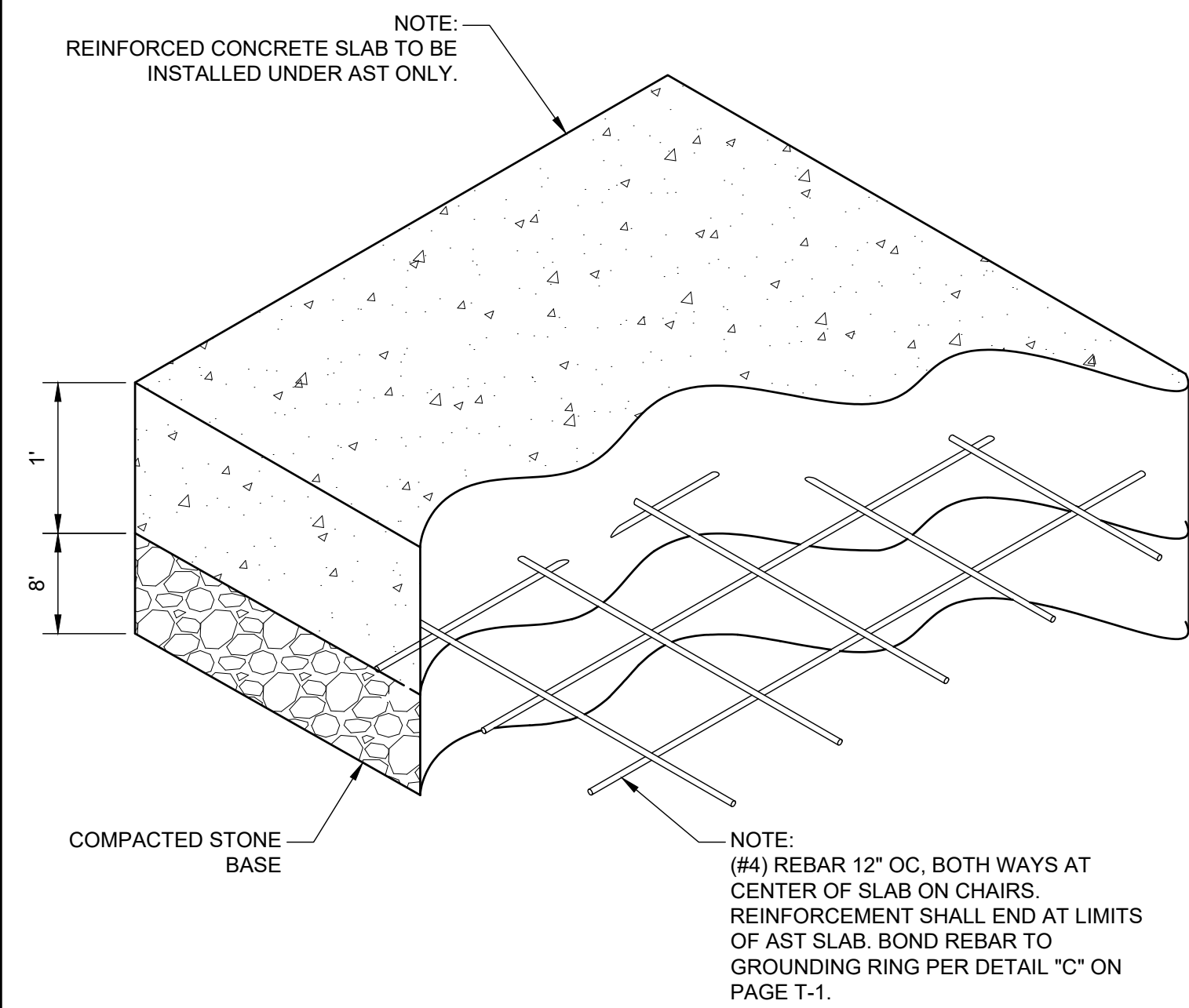
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PHONE: 440-842-6501

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**D-2**



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VAN BUREN, MI 48111



**DIAMOND Z**  
ENGINEERING, INC.

## CONCRETE AND MISCELLANEOUS SITE DETAILS

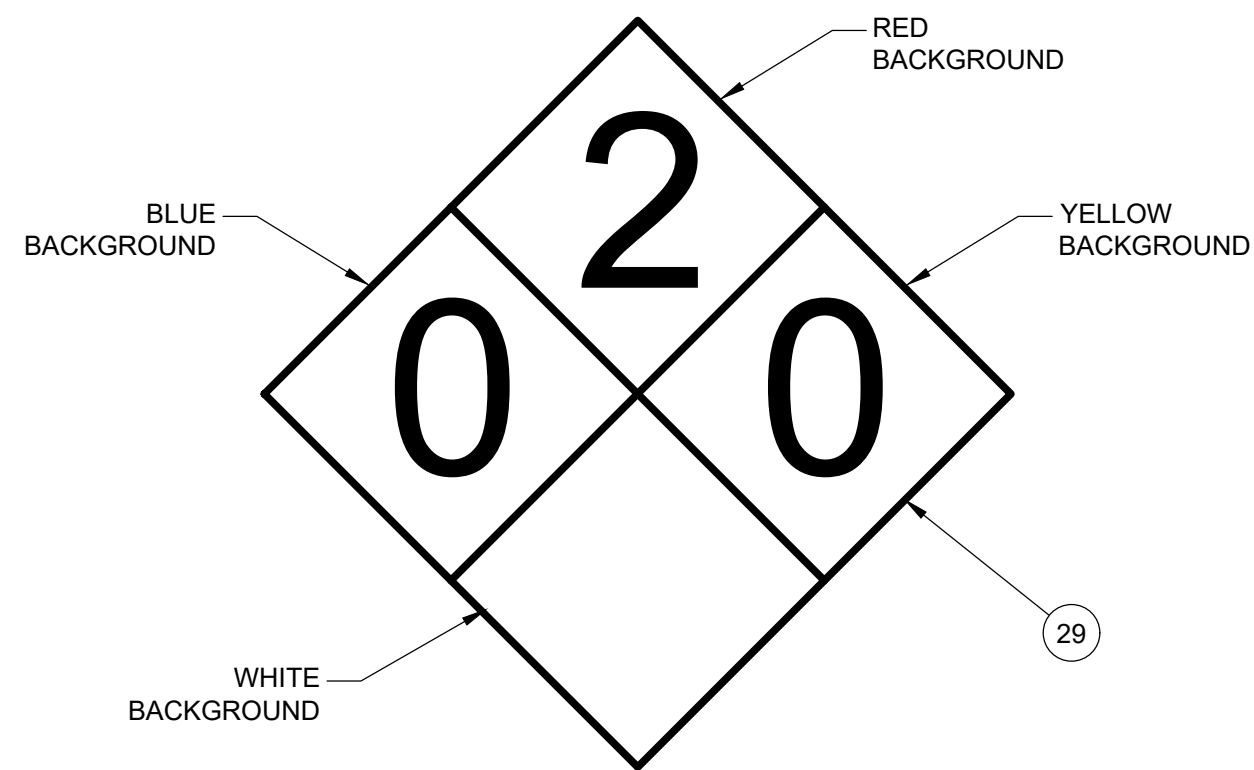
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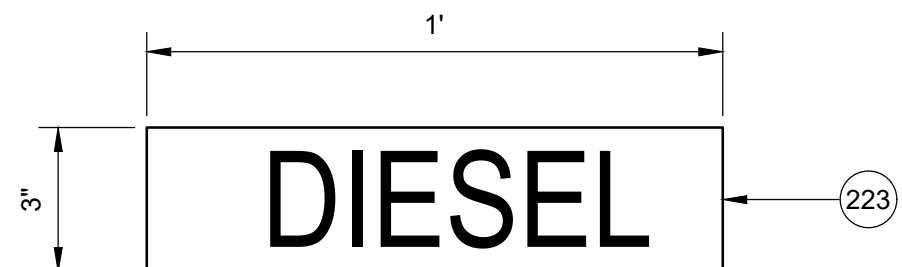
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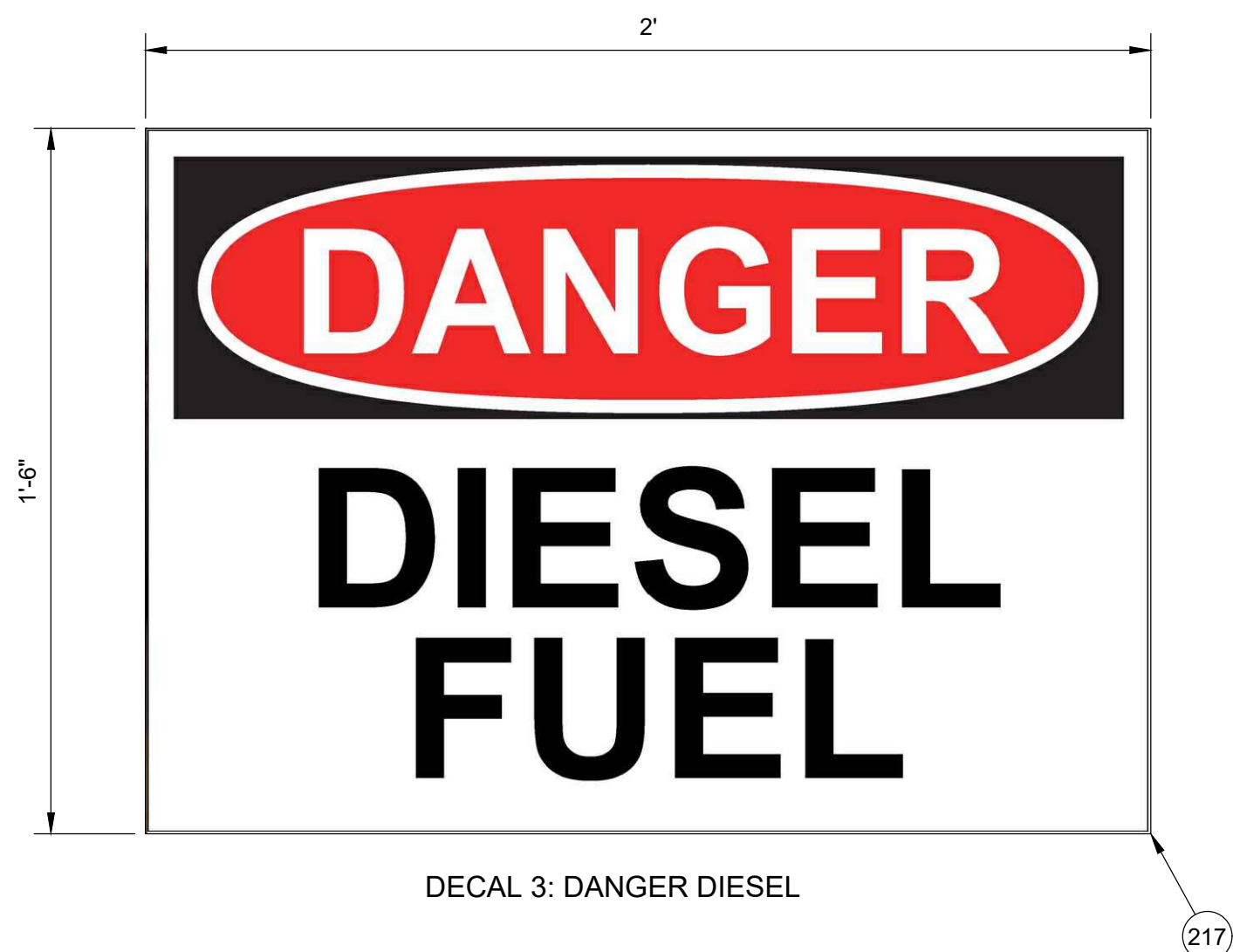
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FS-1



DECAL 1: 11"x11" HAZARDOUS MATERIAL DIAMOND

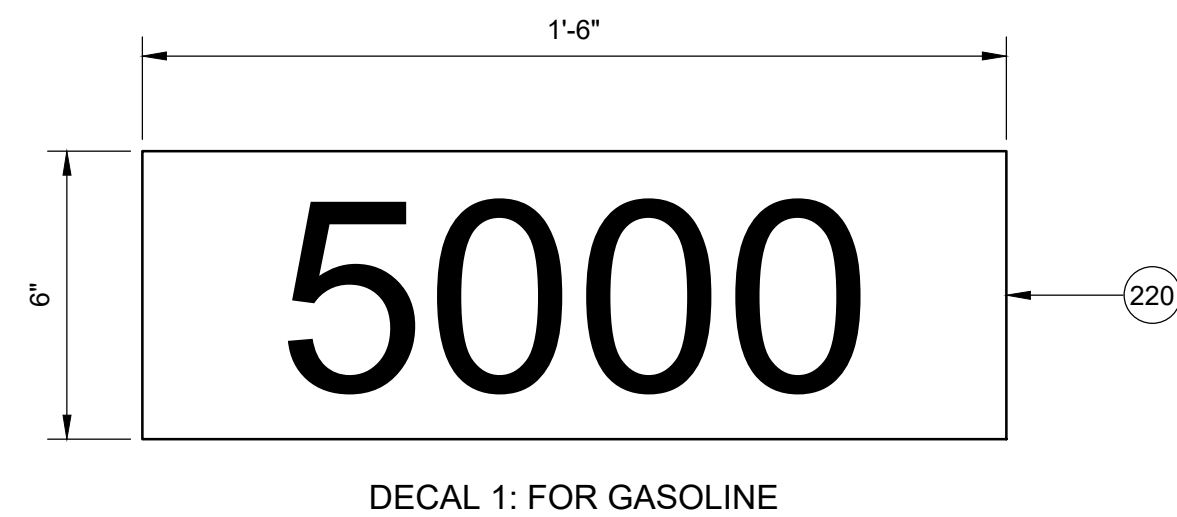


DECAL 2: DIESEL

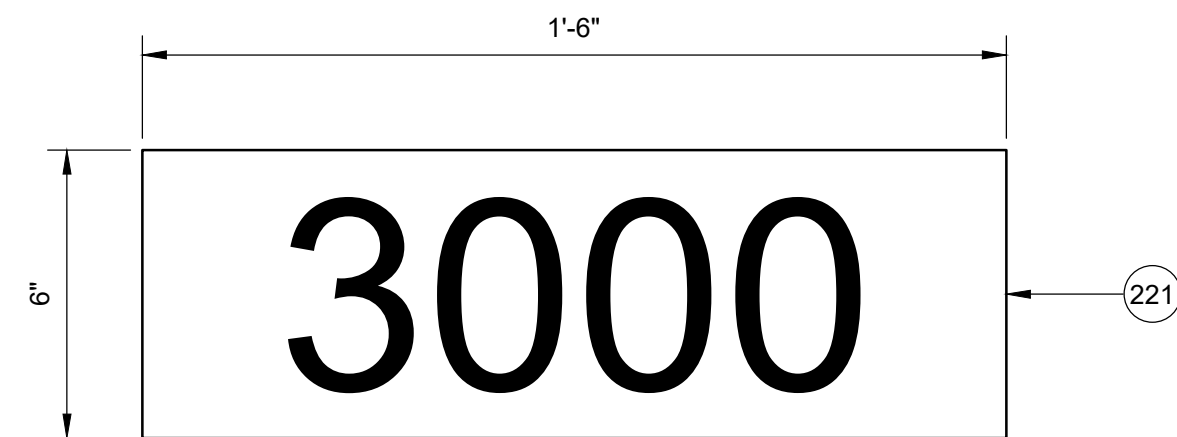


DECAL 3: DANGER DIESEL

**A** DIESEL AST SIGNAGE/DECALS  
SCALE: 3" = 1'-0"



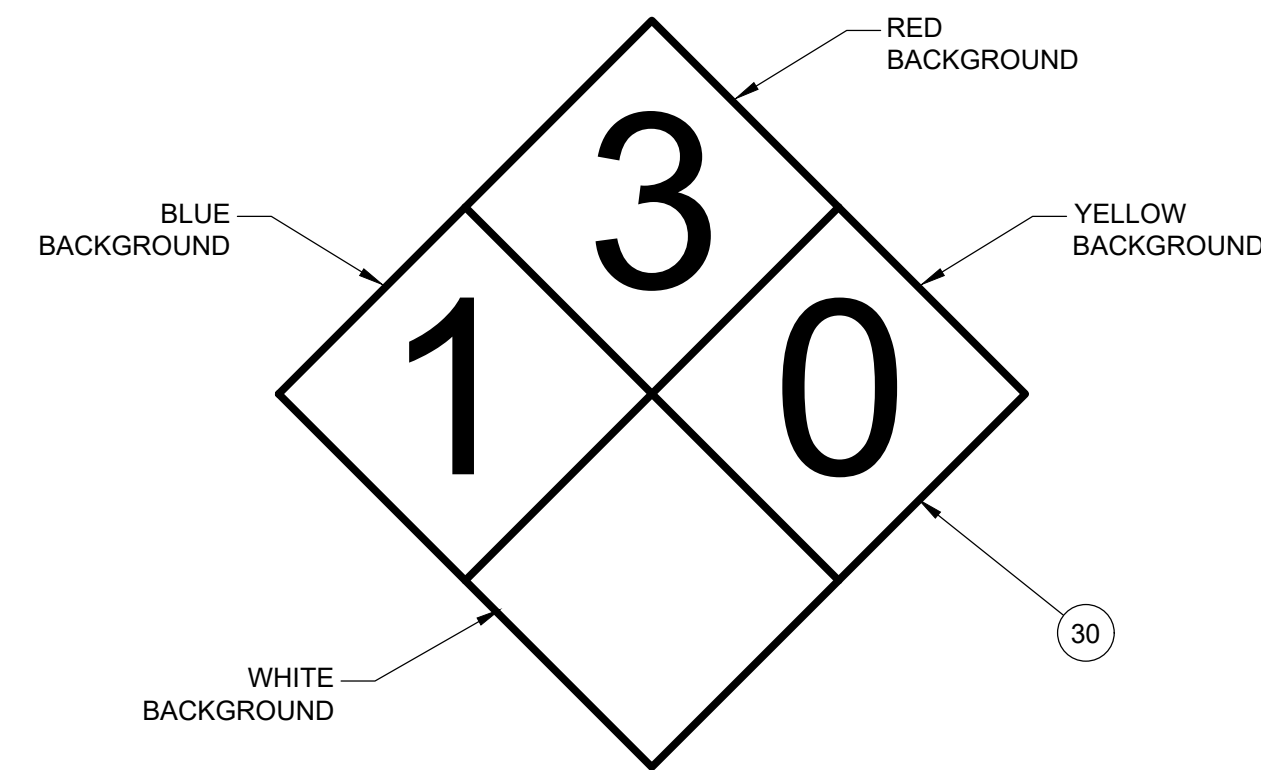
DECAL 1: FOR GASOLINE



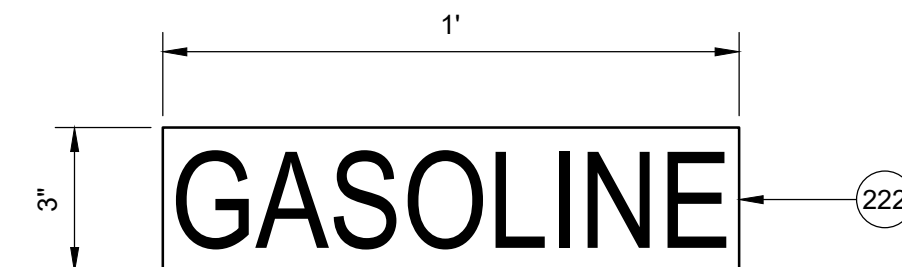
DECAL 2: FOR DIESEL



**B** NO SMOKING DECAL  
SCALE: 3" = 1'-0"



DECAL 1: 11"x11" HAZARDOUS MATERIAL DIAMOND

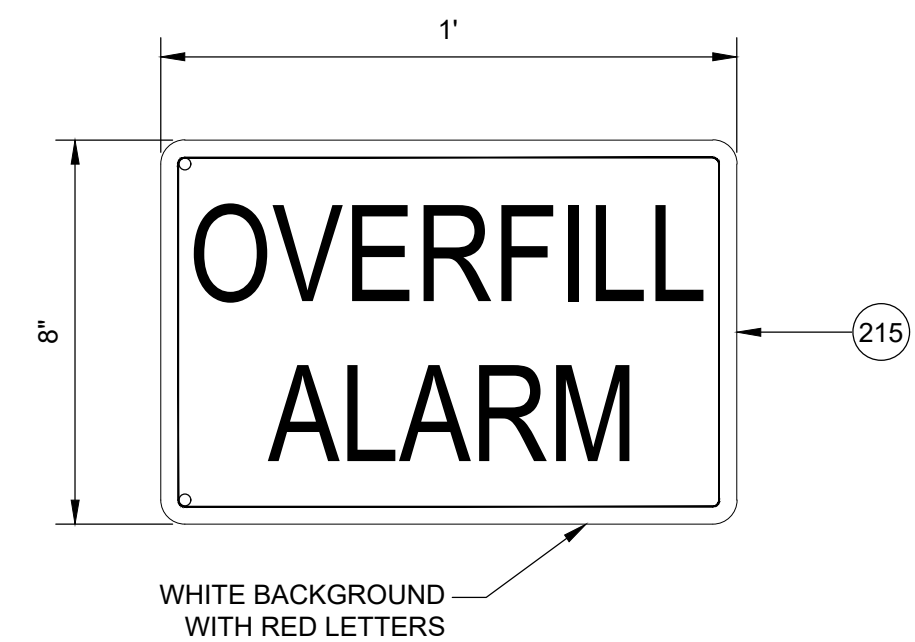


DECAL 2: GASOLINE

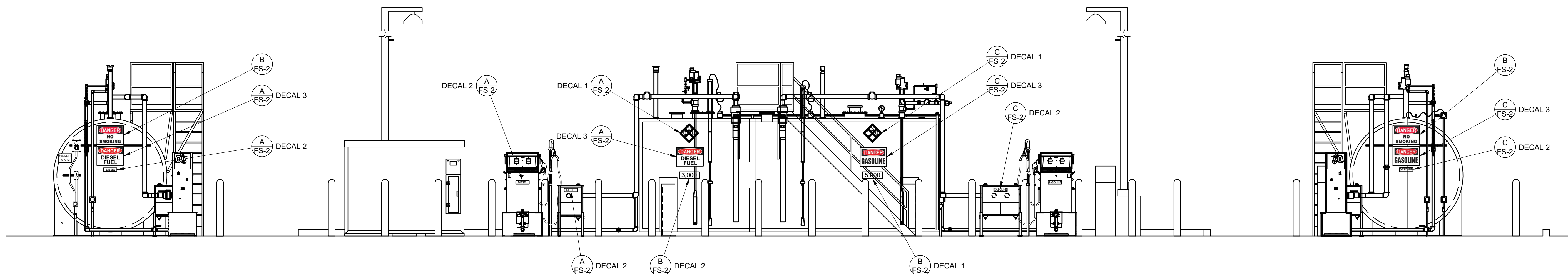


DECAL 3: DANGER GASOLINE

**C** GASOLINE AST SIGNAGE/DECALS  
SCALE: 3" = 1'-0"



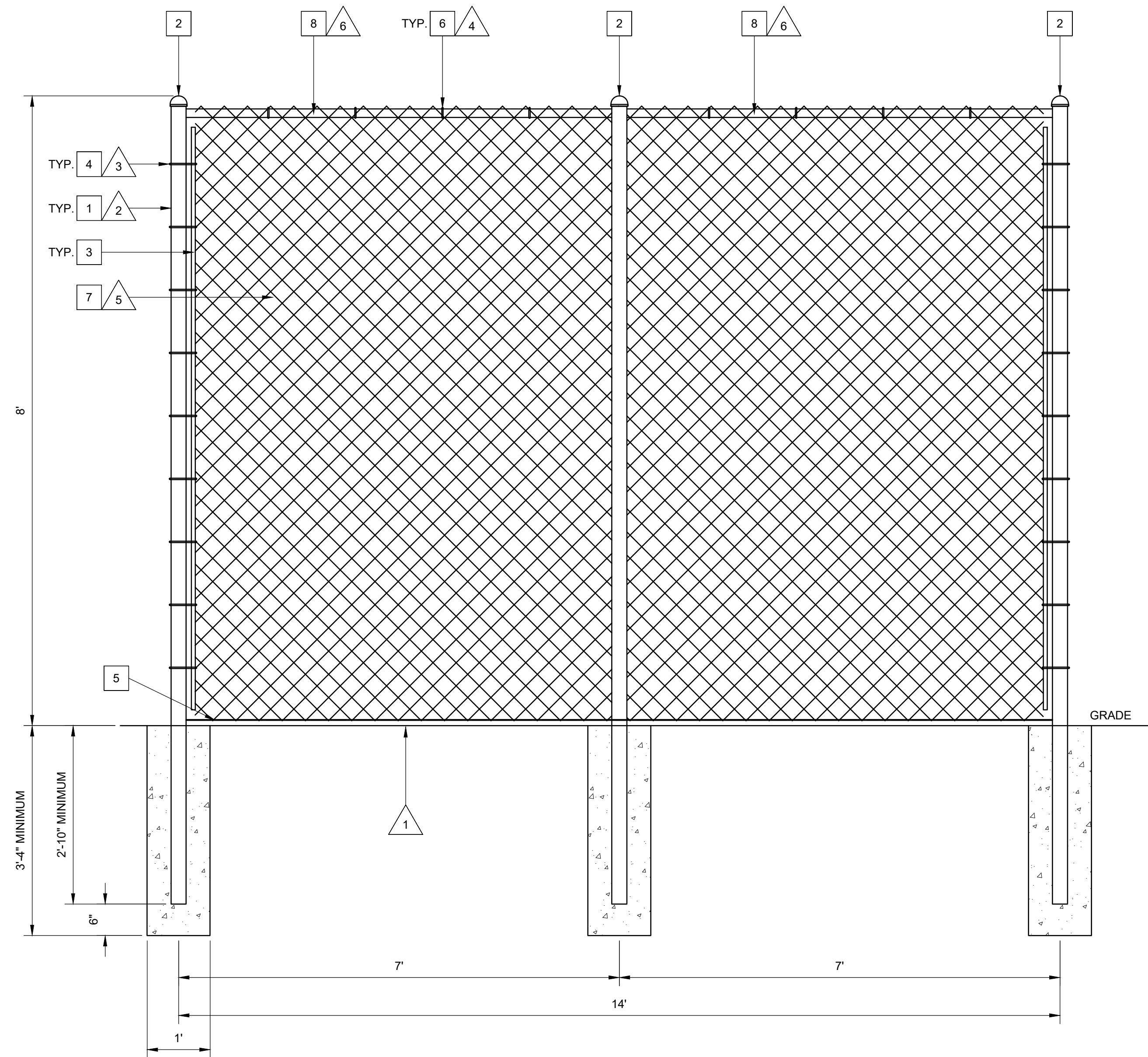
**D** OVERFILL ALARM SIGNAGE  
SCALE: 3" = 1'-0"



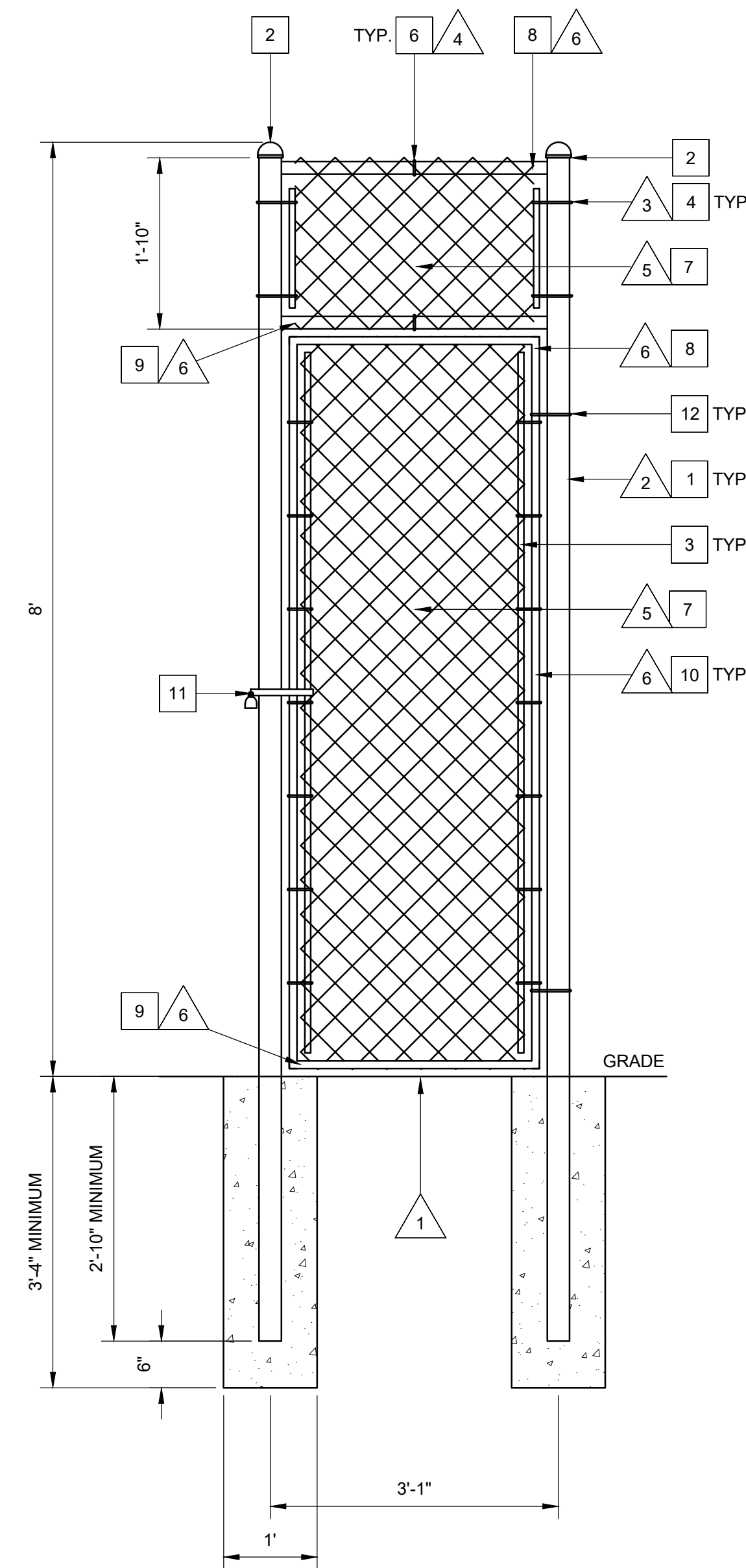
**E** AST SIGNAGE LAYOUT  
SCALE: 1/4" = 1'-0"

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SIGNAGE DETAILS				
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DRAWING NO. FS-2				





**A** TYPICAL SECURITY FENCE - ELEVATION  
SCALE: 3/4" = 1'-0"



**B** GATE ELEVATION  
SCALE: 3/4" = 1'-0"

SECURITY FENCE MATERIALS			
ITEM	DESCRIPTION	QTY.	SUPPLIED BY
1	TERMINAL POST	15	FSC
2	TERMINAL POST CAP	15	FSC
3	TENSION BAR	AS REQ'D	FSC
4	TENSION BANDS	AS REQ'D	FSC
5	BOTTOM TENSION WIRE	AS REQ'D	FSC
6	WIRE FABRIC TIES	AS REQ'D	FSC
7	WIRE FABRIC (CHAIN LINK)	AS REQ'D	FSC
8	TOP RAIL	AS REQ'D	FSC
9	BOTTOM RAIL	AS REQ'D	FSC
10	SIDE RAIL (GATE ONLY)	2	FSC
11	LOCKABLE FORK LATCH	1	FSC
12	HINGES (GATE ONLY)	2	FSC

- GENERAL NOTES**
1. MAXIMUM SPACING OF 2" FROM BOTTOM OF FENCING TO GRADE.
  2. TERMINAL POSTS ARE TO BE A MINIMUM OF 12' 10" WITH AN OUTER DIAMETER OF 2-7/8" AND A WALL THICKNESS OF 0.110".
  3. MAXIMUM SPACING FOR TENSION BANDS IS 12".
  4. MAXIMUM SPACING FOR WIRE FABRIC TIES IS 2'.
  5. THE CHAIN LINK WIRE FABRIC IS TO BE A MINIMUM OF 12-1/2 GAUGE.
  6. THE TOP, BOTTOM AND SIDE RAILS ARE TO HAVE AN OUTER DIAMETER OF 1-5/8" AND A WALL THICKNESS OF 0.047".
  7. ALL FENCING TO BE BLACK VINYL COATED.

REVISIONS				
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1/20/2023				
4/6/2023				
4/24/2023				

BID AND PERMIT SET

REVISED BID AND PERMIT SET

REVISED BID AND PERMIT SET

1

2

3

4

5

6

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DIAMOND Z

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5670 STATE ROAD

CLEVELAND, OH 44134

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SECURITY FENCE DETAILS

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SCALE: 3/4" = 1'-0"

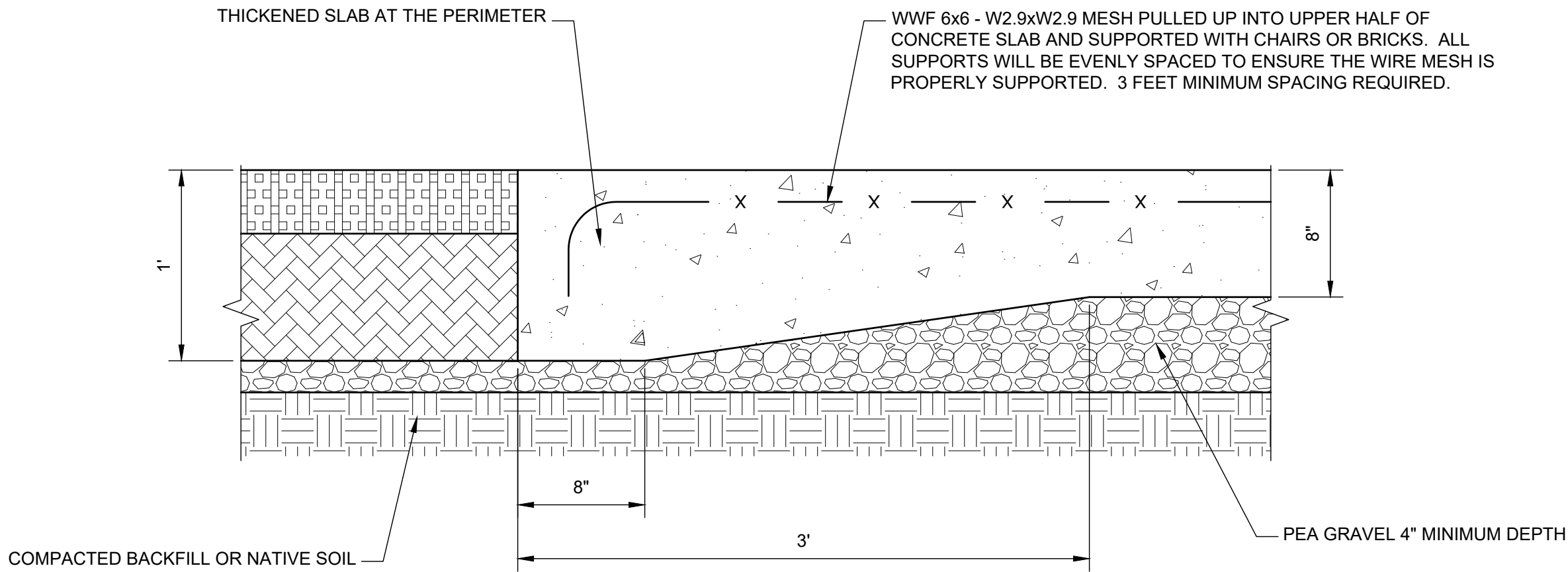
DATE: 1/20/2023

DRAWN BY: GLZ

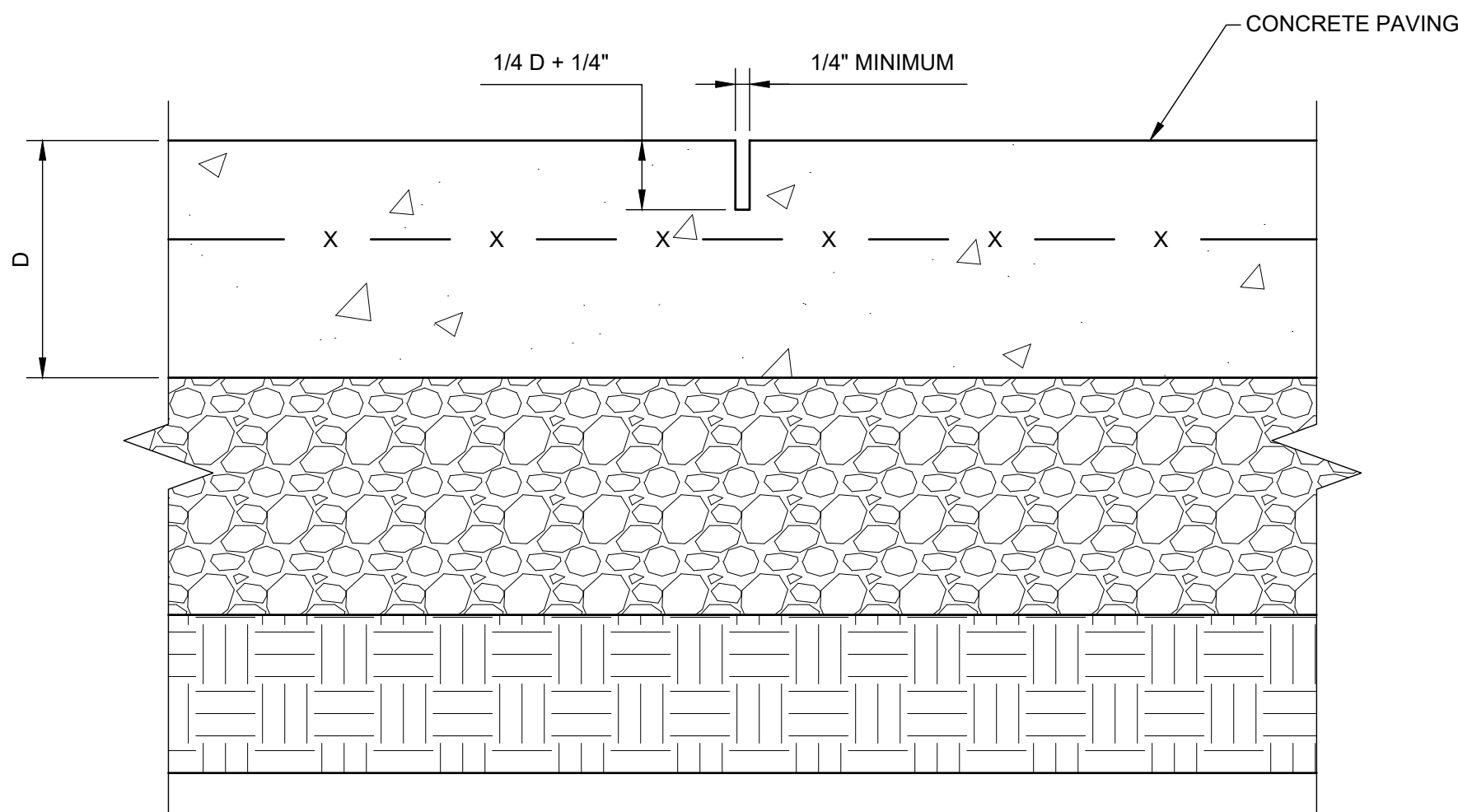
PROJECT NO.: MI-4008

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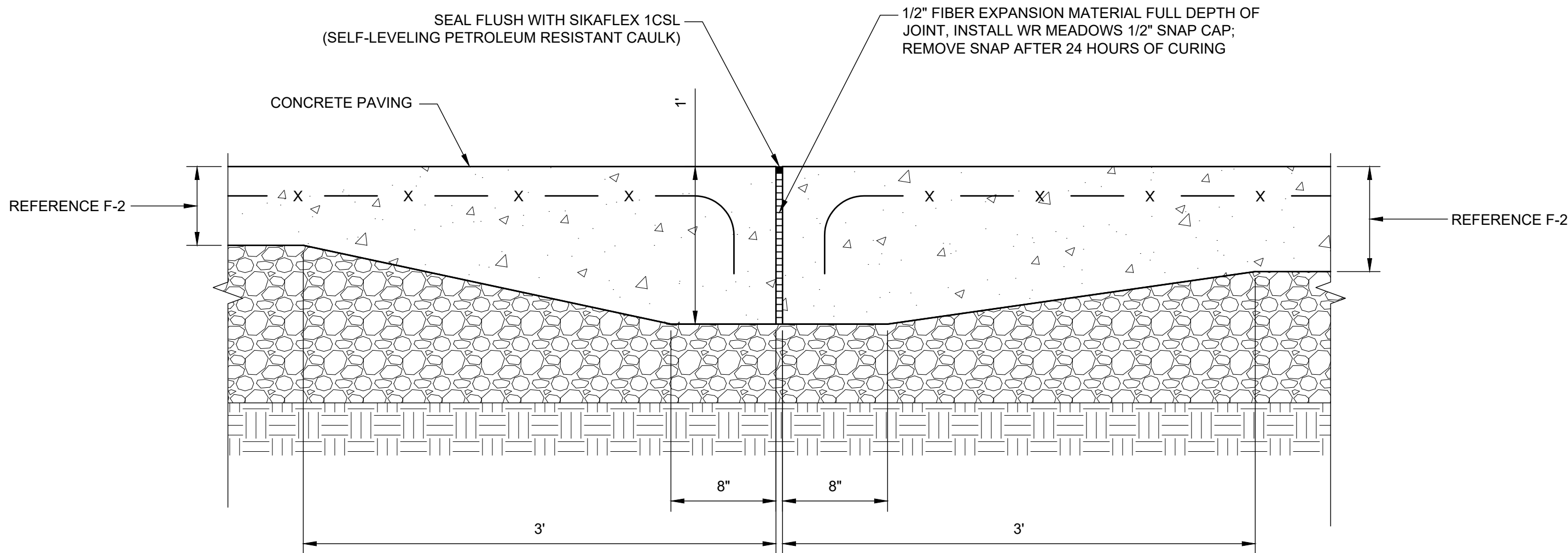
FS-3



**A** 8" CONCRETE PAVING  
SCALE: 1-1/2" = 1'-0"



**B** SAWCUT CONTROL JOINT  
SCALE: 3" = 1'-0"



**C** EXPANSION JOINT  
SCALE: 1-1/2" = 1'-0"

REVISIONS				
TAF				
1/20/2023				

BID AND PERMIT SET

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CONCRETE DETAILS

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SCALE: AS NOTED	DATE: 1/20/2023
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**FS-4**



◆ N.E.C. HAZARDOUS AREA NOTES

A. ALL CONDUIT ENTERING AND LEAVING THE CLASSIFIED/ HAZARDOUS AREAS SHALL HAVE SEAL-OFFS PER N.E.C. 501.5(A)

B. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK - FILL OPENING)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:  
 ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFIED LOCATION.

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:  
 UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN A HORIZONTAL RADIUS OF 10 FEET FROM A LOOSE FILL CONNECTION AND WITHIN A HORIZONTAL RADIUS OF 5 FEET FROM A TIGHT FILL CONNECTION.

C. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (UNDERGROUND TANK - VENT DISCHARGING UPWARD)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:  
 WITHIN 5 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.

EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:  
 SPACE BETWEEN 5 FEET AND 10 FEET OF OPEN END OF VENT, EXTENDING IN ALL DIRECTIONS.

D. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (REMOTE PUMP - OUTDOORS)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:  
 ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL IF ANY PART IS WITHIN A HORIZONTAL DISTANCE OF 10 FEET FROM ANY EDGE OF PUMP.  
 EXTENT OF CLASS 1, GROUP D, DIVISION 2

LOCATION:  
 WITHIN 3 FEET OR ANY EDGE OF PUMP, EXTENDING IN ALL DIRECTIONS. ALSO UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 10 FEET HORIZONTALLY FROM ANY EDGE OF PUMP.

E. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE -PITS)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:  
 ANY PIT, BOX, OR SPACE BELOW GRADE LEVEL, ANY PART OF WHICH IS WITHIN THE DIVISION 1 OR 2 CLASSIFIED LOCATION.

F. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 1 LOCATION:  
 SPACE CLASSIFICATION INSIDE THE DISPENSER ENCLOSURE IS COVERED IN ANSIUL 87, "POWER OPERATED DISPENSING DEVICES FOR PETROLEUM PRODUCTS."

G. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - DISPENSER)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:  
 WITHIN 18 INCHES HORIZONTALLY IN ALL DIRECTIONS EXTENDING TO GRADE FROM (1) THE DISPENSER ENCLOSURE OR (2) THAT PORTION OF THE DISPENSER ENCLOSURE CONTAINING LIQUID HANDLING COMPONENTS.

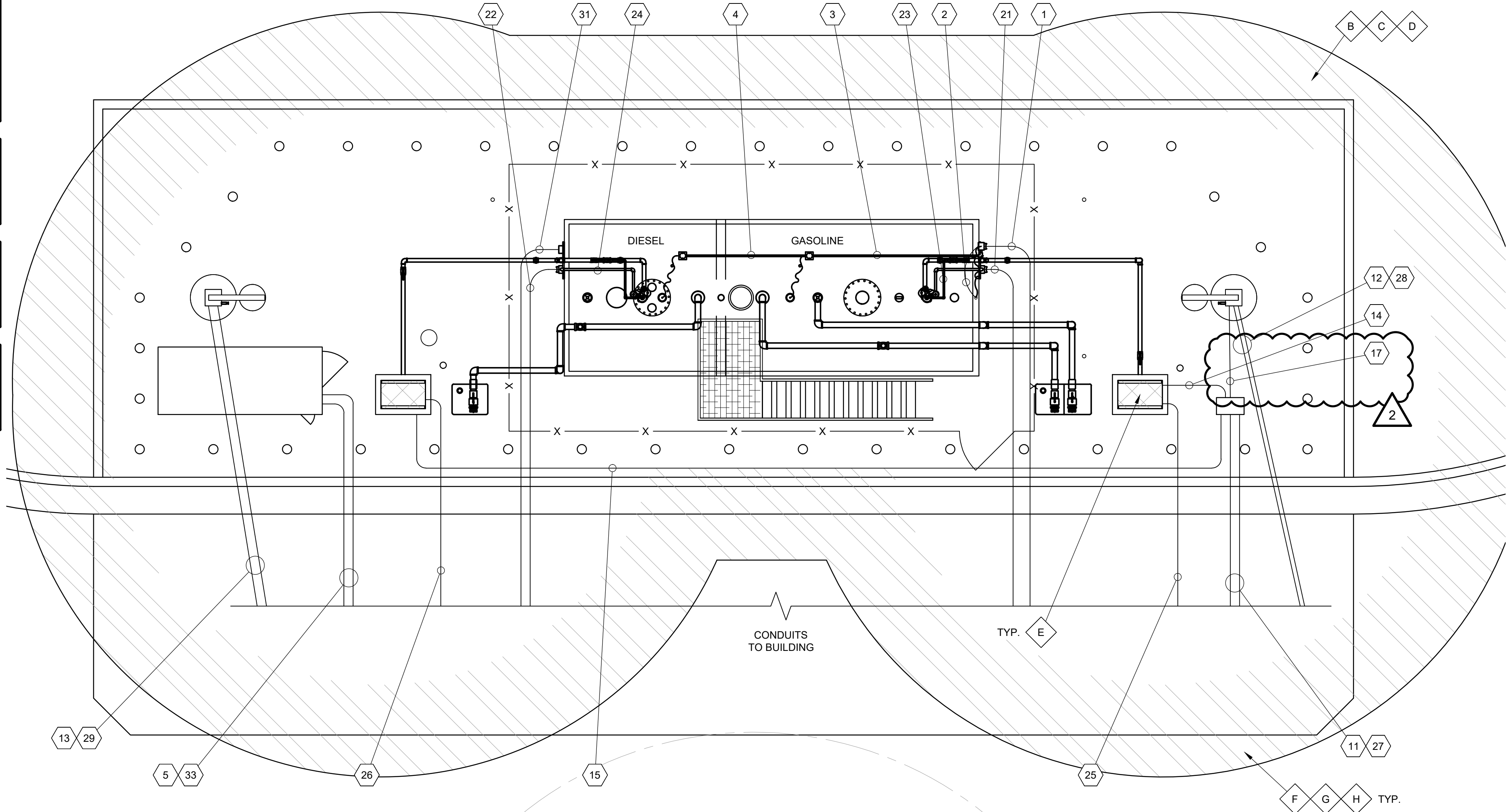
H. TYPICAL N.E.C. ARTICLE 514 CLASS 1 LOCATION (DISPENSING DEVICE - OUTDOOR)  
 EXTENT OF CLASS 1, GROUP D, DIVISION 2 LOCATION:  
 UP TO 18 INCHES ABOVE GRADE LEVEL WITHIN 20 FEET HORIZONTALLY OF ANY EDGE OF ENCLOSURE.

NOTE:  
 NO IMC ALLOWED. THE FIRST AND LAST STICK OF EACH CONDUIT WILL BE ROB ROY PVC COATED RIGID METALLIC CONDUIT BELOW GRADE. ALL CONDUIT WILL TRANSITION TO SCHEDULE 40 PVC UNDERGROUND BETWEEN THE FIRST AND LAST STICKS OF ROB ROY PVC COATED RIGID METALLIC CONDUIT.

NOTE:  
 ALL VEEDER ROOT CABLING MUST BE BELDEN 88760 AND WILL TERMINATE AT NEW CONSOLE

NOTE:  
 ELECTRICAL CONTRACTOR TO TERMINATE ALL NEW FUEL POWER CONDUCTORS INTO NEW FUEL CONTROL PANEL

NOTE:  
 ALL CONDUITS WILL HAVE SEAL OFFS AS THE FIRST FITTING ABOVE GRADE



CONDUIT LEGEND					
CONDUIT	SIZE	TYPE	SOURCE	DESTINATION	PURPOSE
1	1"	INTRINSICALLY SAFE	WATER TOWER MECHANICAL ROOM	AST GASOLINE END J-BOX	AST PROBES AND INTERSTITIAL SENSOR
2	3/4"	INTRINSICALLY SAFE	AST GASOLINE END J-BOX	INTERSTITIAL RISER ON TANK	INTERSTITIAL SENSOR
3	3/4"	INTRINSICALLY SAFE	AST GASOLINE END J-BOX	GASOLINE TANK ATG RISER J-BOX	GASOLINE AST PROBE AND DIESEL AST PROBE
4	3/4"	INTRINSICALLY SAFE	GASOLINE TANK ATG RISER J-BOX	DIESEL TANK ATG RISER J-BOX	DIESEL AST PROBE
5	3/4"	INTRINSICALLY SAFE	WATER TOWER MECHANICAL ROOM	DEF AST	INVENTORY PROBE
11	3/4"	LOW VOLTAGE	WATER TOWER MECHANICAL ROOM	PETRO VEND PEDESTAL	DATA COMMUNICATION
12	1"	LOW VOLTAGE	WATER TOWER MECHANICAL ROOM	GASOLINE END LIGHT POLE	FUTURE CAMERAS
13	1"	LOW VOLTAGE	WATER TOWER MECHANICAL ROOM	DIESEL END LIGHT POLE	FUTURE CAMERAS
14	3/4"	LOW VOLTAGE	PETRO VEND PEDESTAL	GASOLINE DISPENSER	DATA COMMUNICATION
15	3/4"	LOW VOLTAGE	PETRO VEND PEDESTAL	DIESEL DISPENSER	DATA COMMUNICATION
16	1"	LOW VOLTAGE	WATER TOWER MECHANICAL ROOM	REMOTE EMERGENCY STOP BOLLARD	SPARE (PULL STRING ONLY WITH SEAL OFF)
17	3/4"	LOW VOLTAGE	PETRO VEND PEDESTAL	GASOLINE END LIGHT POLE	AVI ANTENNA DATA COMMUNICATION
21	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	GASOLINE END POWER J-BOX	GASOLINE STP MOTOR POWER
22	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	DIESEL END POWER J-BOX	DIESEL STP MOTOR POWER
23	3/4"	HIGH VOLTAGE	GASOLINE END POWER J-BOX	GASOLINE STP MOTOR	GASOLINE STP MOTOR POWER
24	3/4"	HIGH VOLTAGE	DIESEL END POWER J-BOX	DIESEL STP MOTOR	DIESEL STP MOTOR POWER
25	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	GASOLINE DISPENSER	DISPENSER POWER
26	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	DIESEL DISPENSER	DISPENSER POWER
27	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	PETRO VEND PEDESTAL	PETRO VEND PEDESTAL POWER
28	1"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	GASOLINE END LIGHT POLE	AREA LIGHT POWER
29	1"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	DIESEL END LIGHT POLE	AREA LIGHT POWER
30	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	REMOTE EMERGENCY STOP BOLLARD	EMERGENCY STOP POWER
31	3/4"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	AST DIESEL END POWER J-BOX	OVERFILL ALARM POWER
32	3/4"	HIGH VOLTAGE	AST DIESEL END POWER J-BOX	OVERFILL ALARM	OVERFILL ALARM POWER
33	1"	HIGH VOLTAGE	WATER TOWER MECHANICAL ROOM	DEF AST	DEF STP MOTOR AND HEATER POWER

REVISIONS					
GLZ	ERK				
1/20/2023	4/6/2023				
BID AND PERMIT SET		REVISED BID AND PERMIT SET			
△	△	△	△	△	△

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**DIAMOND Z**  
 ENGINEERING, INC.

CONDUIT AND HAZARDOUS AREA LAYOUT

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SCALE:  
 1/4" = 1'-0"

DATE:  
 1/20/2023

DRAWN BY:  
 GLZ

PROJECT NO.:  
 MI-4008

DRAWING NO.  
**FE-1**

